# *Mount Mitchell State Park*
# *General Management Plan*

# GENERAL MANAGEMENT PLAN

# FOR

# MOUNT MITCHELL STATE PARK

Department of Environment, Health, and Natural Resources

Division of Parks and Recreation

Planning and Development Section

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# INTRODUCTION

Planning is an essential element of effective and efficient park administration and management. The North Carolina General Assembly acknowledged its importance by passing state parks system legislation that includes planning requirements.

The 1987 State Parks Act (G.S.114-44.7 through 114-44.14) stipulates that a State Parks System Plan be prepared. The plan was completed in December 1988. It evaluated the statewide significance of each park, identified duplications and deficiencies in the system, described the resources of the system, proposed solutions to problems, described anticipated trends, and recommended means and methods to accommodate trends.

The State Parks Act also requires each park to have an individual general management plan. The general management plans are required to:

> ...include a statement of purpose for the park based upon its relationship to the System Plan and its classification. An analysis of the major resources and facilities on hand to achieve those purposes shall be completed along with a statement of management direction. The general management plan shall be revised as necessary to comply with the System Plan and to achieve the purpose of the [State Parks Act].

The general management plan (GMP) is to be a comprehensive five-year plan of management for a park unit. GMP's function to:

1. describe park resources and facilities;
2. state the purpose and importance of each park unit;
3. outline interpretive themes and propose locations for informational and interpretive facilities;
4. analyze park and recreation demands and trends in the park's service area;
5. summarize the primary laws guiding park operations;
6. identify internal and external threats to park natural and cultural resources, and propose appropriate responses;
7. identify and set priorities for capital improvement needs;
8. analyze visitor services and propose efficient, effective, and appropriate means of responding to visitor needs; and
9. review park operations and identify actions to support efficient and effective park administrative procedures.

The GMP for Mount Mitchell State Park, developed with public involvement, is intended to serve these purposes.

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# I. DESCRIPTION OF

# MOUNT MITCHELL STATE PARK

## LOCATION AND ACCESS

Mount Mitchell State Park is located in western North Carolina about 34 road miles northeast of Asheville. Lying in southern Yancey County, the park can be reached via the Blue Ridge Parkway and NC 128. The park entrance is at milepost 355.4 of the parkway.

## LAND BASE

Mount Mitchell State Park, established in 1916 as North Carolina's first state park, includes 1,677 acres in the Black Mountain range. Mount Mitchell, with an elevation of 6,684 feet, is the highest peak in the eastern United States. Its erosion-resistant igneous and metamorphic rocks have allowed Mt. Mitchell to retain its dramatic heights.

The 1,395-acre Mount Mitchell Registered Natural Heritage Area is contained within Mount Mitchell State Park. The natural area includes Mount Mitchell and four other peaks exceeding 6,500 feet.

## VISITOR FACILITIES

Mount Mitchell State Park offers various facilities for the enjoyment and support of park visitors. A small nine-site family campground is open May 1 through October, weather permitting. Only tent camping is permitted. Each site is equipped with a grill and picnic table. Restrooms are nearby, but showers and hot water are not provided. The park is also used for pack-in camping all year, weather permitting. Mount Mitchell has approximately 8.8 mils of trails. Campers, after registering their vehicles, may leave vehicles in the park overnight while they backpack into the US Forest Service Commissary Ridge shelters or Deep Gap shelter.

A shady picnic area, open year round, is located at the north end of the summit parking lot. Forty picnic tables, stone grills, and drinking water are also provided. Two picnic shelters with fireplaces, each accommodating up to 16 people, are available for group picnics. The beauty of the park can be seen up close from one of several park trails with varying lengths and difficulties.

An observation tower, open all year, is located a short hike from the summit parking lot. On a clear day, there are spectacular views of the surrounding mountains and the Pisgah National Forest extending as far as 100 miles away. Midway along the hike to the observation tower is a small museum. Its exhibits interpret the

park's history and depict mountain forests, geology, and wildlife.

A concession stand, adjacent to the summit parking lot, is open daily from June 1 through Labor Day and on weekends through late October. Light snacks, crafts and books may be purchased here. Restrooms are also available. A restaurant, located approximately one-half mile from the park office, is open from May 1 through October 31.

## BIOSPHERE RESERVE

Mount Mitchell State Park received certification as a United Nations biosphere reserve on May 12, 1993, joining an international network of more than 250 biosphere reserves. The Man and the Biosphere program was established by the United Nations Education, Scientific and Cultural Organization (UNESCO) in 1970. Its objective is to develop a scientific basis linking the natural and social sciences for the conservation of the biosphere and to improve the relationship of humans and their environment.

Biosphere reserve units are unique resources typically shielded from the influence of development. Each provides a proving ground for ecological research and monitoring as well as standards against which the effects of man's impact on the environment can be measured.

## NATIONAL NATURAL LANDMARK STATUS

The National Natural Landmark program was established by the Secretary of the Interior in 1962 and is administered by the National Park Service. Its mission is to identify and encourage the protection of nationally significant geological and ecological areas and features. Since its inception, the program has designated over 600 sites. Mount Mitchell State Park, which was added to the registry in 1974, was selected on the basis of its status as the highest peak in the eastern United States and because it supports one of the most extensive Fraser fir forests remaining in the United States.

## HISTORY OF THE PARK AREA

Long before explorers left Europe in search of the New World, various Native American tribes inhabited the area surrounding the Black Mountains. Notable among the tribes were the Cherokee, who lived in scattered villages throughout the fertile valleys of the area. Another large tribe, the Catawba, dwelled in the river valley east of the Blue Ridge that now bears its name. These two Native American powers were generally at war with each other, and both waged primarily defensive battles with the Iroquois, who raided southward. War trails used by the Native Americans emerged as the main routes for the oncoming surge of Europeans. In the mid-1700s,

the Native Americans were joined by settlers, primarily of Scotch-Irish and English origin.

In 1787, French botanist Andre Michaux journeyed to the Black Mountains to seek the region's most valuable plants so that the French government might cultivate them on royal plantations. On his biological excursions to the area, Michaux collected over 2,500 specimens of trees, shrubs and other plants. About the same time that his French counterpart explored the area, Englishman John Fraser collected plants from the region to introduce to his native land. It was for this botanical explorer that the most abundant tree along the crest of the Black Mountains -- the Fraser fir -- was named.

Although botany was the first discipline to be explored in the Black Mountains, it was physical geography, particularly the measuring of mountains, that had the greatest impact on the history of Mount Mitchell.

Inspired by reading Michaux's early accounts of the Black Mountains, Dr. Elisha Mitchell --- a minister, professor, and geologist -- made an excursion to the area to measure the mountain elevations. Through the use of barometric pressure readings and mathematical formulas, Mitchell figured the highest elevation of the range. Subsequent visits in 1838 and 1844 led Dr. Mitchell to calculate the height of the peak at 6,672 feet -- amazingly, only a mere 12 feet short of its actual height. Dr. Mitchell's measurements confirmed that Mount Mitchell was indeed higher than Grandfather Mountain, previously assumed to be the highest peak in the region.

In the 1850s, controversy arose over which peak in the range was the highest. Thomas Clingman, a former student of Dr. Mitchell's, and at the time of the dispute a United States senator, set the elevation of the highest peak at 6,941 feet and insisted that Mitchell had measured another peak. In 1857, Dr. Mitchell returned to the Black Mountains to verify his measurements and support his claim. While hiking across the mountain, he fell from a cliff above a 40-foot waterfall. Knocked unconscious by the fall, Dr. Mitchell drowned in the water below. In honor of his work, the highest peak in the Black Mountain range was given his name in 1858. Though originally buried in Asheville, Mitchell's body was fittingly reburied several years later atop Mount Mitchell.

Until the late 1800s, the Black Mountains remained largely in a wilderness state. The only apparent influence of man upon the environment was that increased settlement and hunting had led to a reduced animal population. This lack of exploitation of natural resources was not to last, however. By the early 1900s, extensive logging operations had denuded much of the Black Mountain range.

Logging activity had expanded rapidly by 1913, and citizens began to voice their alarm over the destruction of the forest. Foremost among them was Locke Craig, governor of North Carolina from 1913 to 1917. In response to the environmental and aesthetic damage of

logging operations, a bill was introduced in the General Assembly to authorize purchase of the summit. It quickly passed on March 3, 1915, and a year later land was purchased and Mount Mitchell became North Carolina's first state park. The legislation cited Mount Mitchell's altitude, scenic beauty, importance to water quality, recreational value, forest resources, and the threats to the mountain as justification for its purchase. By the end of 1916, 795 acres had been acquired for the park. Another 700 acres were added in 1924.

Because of its inaccessibility (there was no road), the park was slow to develop. A warden was hired, primarily to keep watch for fires and to greet the few visitors. A cabin for the warden was built in 1928, and a U.S. Weather Bureau station was housed in the cabin.

Two privately owned toll roads, one from Black Mountain and the other from Pensacola, provided access to Mount Mitchell. The Old Mitchell Trail from the north fork of the Swannanoa River was by far the most popular route. For a time, one of the lumber companies put passenger cars on its logging railroad to carry visitors to Camp Alice, a logging camp below Mount Mitchell. The railroad was abandoned in the 1920s when a road from Black Mountain was built. Between the 1920s and 1940s, tourists drove to Camp Alice and hiked the remaining mile to Mount Mitchell. Visitation did not exceed 10,000 people per year during these years.

To give visitors a better view of the land surrounding Mount Mitchell, a stone observation tower was built on the summit near Mitchell's grave. It was donated by C. J. Harris of Dillsboro and was dedicated in 1927.

During the Great Depression years, federally sponsored work projects were developed all over the country to provide work for the vast number of unemployed people. One of these projects, the Blue Ridge Parkway, was initiated in 1935 to connect the Great Smoky Mountains National Park with Virginia's Shenandoah National Park.

Mount Mitchell benefitted in several ways from the Blue Ridge Parkway and from federal work programs initiated by Roosevelt in the 1930s. First, much of the initial park development was done by the Civilian Conservation Corps. CCC workers planted seedlings and built trails, a water system, fire breaks, and a concession stand. This work continued until the outbreak of World War II.

Second, as sections of the Blue Ridge Parkway were completed, visitation in the region steadily increased. By 1946, the parkway's annual visitation had reached one million. Mount Mitchell, however, did not begin to have large visitation growth until a public road was built from the parkway to the park.

In 1946, North Carolina initiated construction of a public highway, NC 128, from the Blue Ridge Parkway to the summit of Mount Mitchell. The road generally followed the Old Mitchell Trail and was 4.7 miles

long. A parking area and a concession building were built at the terminus of the road. After completion of the road in 1948, park attendance increased to 100,000 visitors in 1949, and by 1952 annual visitation had jumped to 360,000.

During the next several years, a restaurant, a maintenance facility, a picnic area, a 20-site tent camp, and ranger residences were developed. By the 1960s, a new observation tower to replace the 1927 tower, a permanent park office at Stepps Gap, and a museum along the trail to the summit of Mount Mitchell were built to accommodate increasing visitor use.

Since 1924, little acreage has been added to Mount Mitchell State Park. It currently consists of 1,677 acres. In 1991, however, the adjacent landowners of the 8,000-acre Cane River Valley granted a scenic easement to the American Farmland Trust. This scenic easement is of great benefit to Mount Mitchell State Park and its visitors because the integrity of the natural landscape will be maintained. Also, it serves as a model that other adjacent landowners can use in protecting their lands from the threat of development.

The logging operations of the early 20th century were a grave threat to the Black Mountains, but today these peaks face a different danger: Many of the trees of Mount Mitchell are dying.

While all of the causes have yet to be determined, an insect -- the Balsam Woolly Adelgid -- is the primary cause of the death of the Fraser Fir, which comprises over 80 percent of the evergreen forest. Ice storms, high winds, drought, and air pollution combine with the insect attack to cause the decline in the forest.

# II. PARK PURPOSES

## MISSION STATEMENT FOR THE STATE PARKS SYSTEM

***The North Carolina state parks system exists for the enjoyment, education, health, and inspiration of all our citizens and visitors. The mission of the state parks system is to conserve and protect representative examples of the natural beauty, ecological features and recreation resources of statewide significance; to provide outdoor recreation opportunities in a safe and healthy environment; and to provide environmental education opportunities that promote stewardship of the state's natural heritage.***

## PARK PURPOSE STATEMENT

Concerned citizens, led by then-Governor Locke Craig, urged that Mount Mitchell be protected from the massive logging operations that had environmentally and aesthetically damaged much of the Black Mountain range. In response to this concern, the General Assembly in 1915 passed legislation authorizing the purchase of the summit, and a year later Mount Mitchell became North Carolina's first state park. The legislation cited Mount Mitchell's altitude, scenic beauty, importance to water quality, recreational value, forest resources, and the threats to the mountain as justification for its purchase.

Mount Mitchell offers scenic panoramas of mountain peaks, forests, clouds, rolling ridges, and fertile valleys. On clear days, views of up to 100 miles enable visitors to see prominent geographical features in North Carolina and other states. Dramatic climate changes and extreme weather conditions apparent at this high elevation allow visitors to experience the forces of nature first-hand.

The park's high elevation creates local climatic conditions more like those found in Canada than the southeastern United States. Snowfall averages about 104 inches per year, with records of snow falling in every month of the year. The cold and wet environmental conditions serve to host biologic resources that are unusual in North Carolina. The high-elevation plant communities in Mount Mitchell State Park include Fraser Fir Forest, Red Spruce-Fraser Fir Forest, and High Elevation Rocky Summit. Twenty-five special plant species are known from these communities, including mountain paper birch (Betula papyrifera var. cordifolia), Cain's reedgrass (Calamagrostis cainii), wretched sedge (Carex misera), spreading avens (Geum radiatum), fir clubmoss (Huperzia selago), and white mandarin (Streptophus amplexifolius). In addition, 21 uncommon animal species are listed, including the perigrine falcon (Falco perigrinus), Carolina northern flying squirrel (Glaucomys sabrinus

coloratus), southern rock vole (Microtus chrotorrhinus carolinensis), New England cottontail (Sylvilagus transitionalis), and numerous invertebrates.

Mount Mitchell is a nationally significant geological resource. It lies in the crest of the Black Mountains, whose lofty and rugged peaks have been time-worn by wind, water and the forces of nature to rounded, more subdued profiles. Erosion- resistant metamorphic rocks -- gneiss and schist -- have allowed Mount Mitchell to retain its dramatic height of 6,684 feet, making it the highest peak in the United States east of the Mississippi River.

Mount Mitchell State Park has appropriately developed recreational facilities. The park provides a combination of day-use and limited overnight recreational opportunities. These include enjoying magnificent vistas, nature study enhanced by park interpretive programs, hiking, picnicking, limited camping, and winter sports. In addition to serving as a destination point for visitors from near and far, Mount Mitchell also serves as a trailhead for hikers using the extensive trail system on adjoining U.S. Forest Service lands.

Historical evidence of earlier uses of the park can be seen in the old railroad beds and remnants of logging and Civilian Conservation Corps' camps. Thirty-six buildings, located about a mile south of Mount Mitchell's summit, and up to 200 workers were a part of CCC operations from 1936 to 1941.

Mount Mitchell State Park exists primarily because of its scenic beauty and its interacting and important biological and geological resources. The Division is charged with preserving and interpreting these and other values and providing park experiences that promote pride in and understanding of North Carolina's natural heritage.

# III. SUMMARY OF INTERPRETIVE THEMES

The 1987 State Parks Act defines the purposes of the state parks system. It establishes that:

> *The State of North Carolina offers unique archaeologic, geologic, biologic, scenic and recreational resources. These resources are part of the heritage of the people of this State. The heritage of a people should be preserved and managed by those people for their use and for the use of their visitors and descendants.*

It further provides that:

> *Park lands are to be used by the people of this State and their visitors in order to promote understanding of and pride in the natural heritage of this State.*

One of the best methods of meeting these purposes is through environmental education. The Department of Environment, Health, and Natural Resources has adopted the following definition of environmental education:

> *Environmental education is a process that increases awareness, knowledge, and understanding of natural systems -- the interdependence of living things, the impact of human activities -- and results in informed decisions, responsible behavior, and constructive action.*

Mount Mitchell State Park, with its interacting and unique biologic, climatic, ecologic, and geologic natural resources, offers an excellent setting for interpretation and education. The park has three primary interpretive themes and several secondary themes.

## PRIMARY INTERPRETIVE THEMES

### MOUNTAIN BUILDING

This geological theme explores the formation of the highest mountain range in eastern North America. The story of the formation of the Southern Appalachians through structural disturbance of the earth's crust will be depicted, along with the nature of present-day landform features.

### BIOTIC CHANGES ON MOUNT MITCHELL

This theme includes explanations of how insects, other animals and plants, climate, soils, and air pollution interact to create

observed changes and loss of the original forest communities. It answers a frequently asked question of park visitors: What is happening to the trees? Scientists have yet to determine exactly what is responsible for the massive dying of Mount Mitchell's Fraser fir and red spruce coniferous forest communities. An insect, the Balsam Woolly Adelgid, is the primary cause of death in Fraser fir -- but not red spruce. Natural causes, such as ice storms, high winds, drought, and age of trees interact with insect infestation and human-caused air pollution to cause forest decline. Research indicates a correlation between air pollution and forest decline. In fact, four out of five days, Mount Mitchell is covered in clouds and fog, sometimes as acidic as vinegar. Subjected to such pollution, a healthy tree becomes weak and is unable to fight off natural stresses it could otherwise resist.

## BIOLOGICAL ISLANDS OF THE SKY

This biologic theme focuses on the unique plant and animal communities associated with the mountains in the southern Appalachians that are over 5,500 feet in elevation. The spruce-fir coniferous forests on these high southern Appalachian Mountains form isolated and disjunct biological communities that resemble those of southern Canada communities.

## SECONDARY INTERPRETIVE THEMES

Several secondary interpretive themes for Mount Mitchell have been identified. They are:

- rare and endangered species;
- botanical history;
- cultural history of Mount Mitchell State Park;
- environmental monitoring;
- International Biosphere Reserve; and
- unique climate.

# IV. PARK AND RECREATION

# DEMAND AND TRENDS

## ANNUAL VISITATION TRENDS

Unlike most of North Carolina's state parks, Mount Mitchell has not experienced significant growth in annual visitation in recent years. In fact, park visitation today is approximately the same as that experienced during the late 1960s and early 1970s, approximately 300,000. Visitation from 1982 through 1992, with the exception of 1982 and 1984, has been relatively flat, fluctuating between 263,012 and 304,754 (Figure IV-1).

Mount Mitchell's annual visitation, unlike many state parks, has not been affected in recent years by the construction of new visitor facilities. Most of the existing facilities were constructed in the late 1940s and 1950s. Natural resource constraints limit construction, and because the park is already considered fully developed recreationally, no future construction of new recreational facilities is recommended.

With no new facilities planned and relatively stable annual visitation patterns, future visitation will likely hover around the 300,000 level.

## MONTHLY VISITATION TRENDS

Mount Mitchell's monthly visitation is much more seasonal than most state parks. Dramatic differences in attendance exist between the cold and warm weather months (Figure IV-2).

The estimated average monthly visitation for the months of November, December, January, February, March and April, when added together, totals only 16,081. This six-month total is far less than any one of the other six months of the year. More accurate attendance figures for these months are needed, however.

Visitation is highest in the month of October because of the many sightseers that visit the Blue Ridge Parkway and Mount Mitchell to see the fall foliage.

The visitation pattern leads to an obvious conclusion concerning the desirability of using seasonal and peak load personnel to help staff the park during the months of higher visitation. There may also be potential to increase visitation in the winter months by encouraging appropriate winter sports such as cross-country skiing.

# MOUNT MITCHELL ANNUAL VISITATION
## 1982-1992

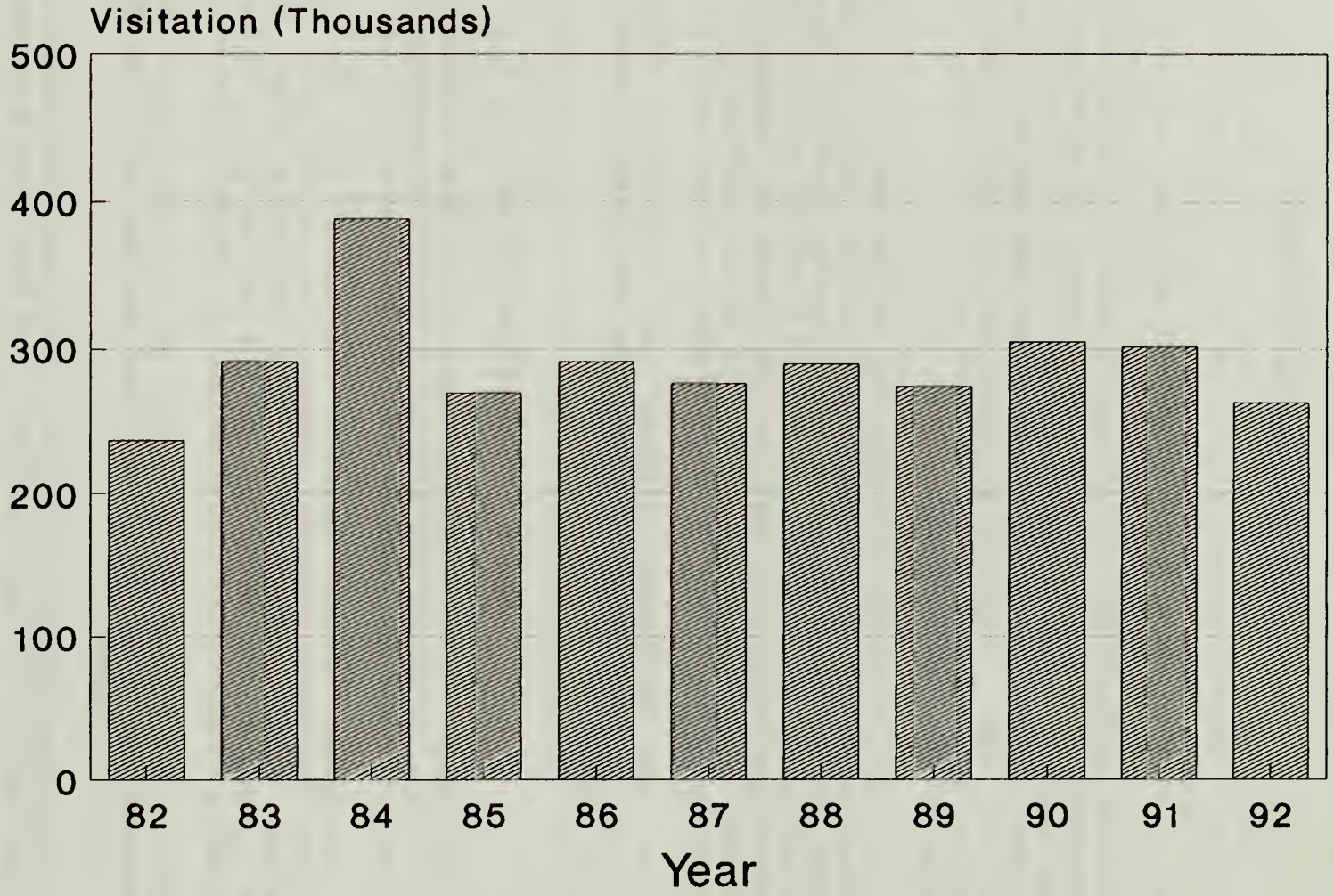



Figure IV-1. MOMI Annual Visitation

# MOUNT MITCHELL MONTHLY VISITATION
## JUNE 1988- MAY 1992

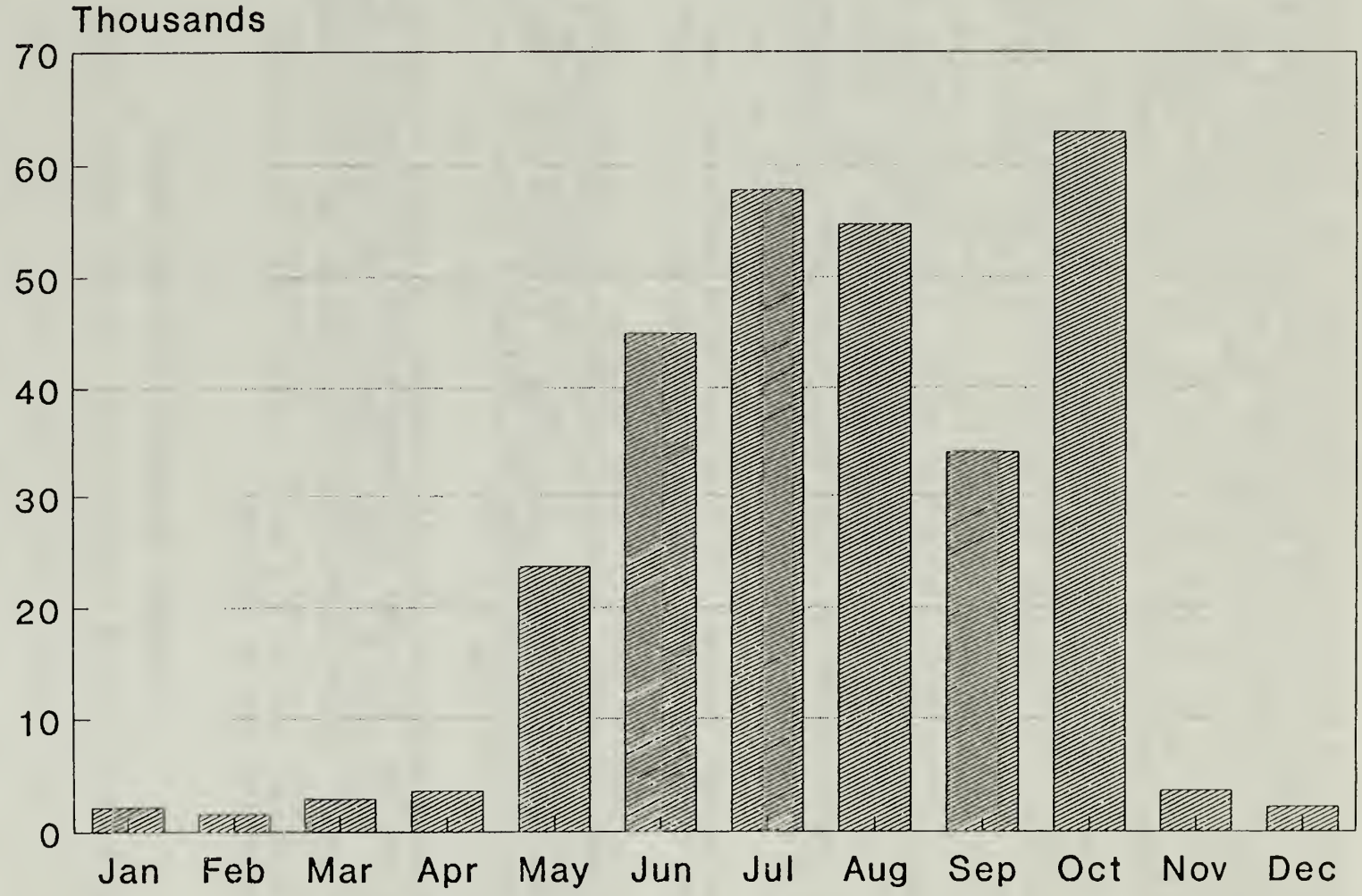



Figure IV-2. Average Monthly Visitation

## VISITOR INFORMATION

In 1987 the U.S.D.A. Forest Service was contracted by the Department to conduct a Public Areas Recreation Visitors Survey (PARVS) of the North Carolina state parks system visitors in order to identify their socio-economic characteristics and economic contribution to the state's economy. While Mount Mitchell was not one of the eight parks involved in the survey, some information concerning state park visitors in general was learned.

Why do people visit state park units? The convenient location was cited by 31 percent of the respondents; 25 percent thought other areas were too crowded; 21 percent liked the good facilities; 8 percent wanted to try a new area; 7 percent enjoyed the scenic beauty; and 6 percent came to see the attraction.

A good percentage of park visitors come from within a 30-mile radius (37 percent), while 17 percent come from 30 to 60 miles away. Park visitors surveyed indicated that the parks served as their sole destination 86 percent of the time. While most visitors come from nearby, the average one-way distance travelled was 139 miles.

Seventy-eight percent of those surveyed indicated that they were return visitors. The average number of return trips per year was six.

Sixty-one percent of visitors statewide came with family members, 16 percent with friends, and 7 percent with family and friends. Ten percent of visitors came alone. Visitors also came in small numbers in organized groups and multiple families. The average group size surveyed was 3.59.

PARVS data indicates that 16.8 percent of groups surveyed used more than one car, and that the average number of persons per car was 3.05. This figure is very close to the three-persons-per-car figure used in compiling Mount Mitchell's visitation figures.

The average age of the park visitor was 38.24 years. The age distribution was as follows:

Percent of Visitors by Age Group

| Under 6 | 6-12 | 13-18 | 19-25 | 26-35 | 36-45 | 46-55 | 56-65 | Over 65 |
|---|---|---|---|---|---|---|---|---|
| 6.7 | 11.6 | 10.6 | 12.5 | 20.1 | 16.9 | 0.9 | 7.3 | 4.4 |

Because the PARVS information shown above was gathered at eight park sites, not including Mount Mitchell State Park, it cannot be considered a valid study of Mount Mitchell visitation. It is useful, however, in providing a general assessment of the state park system's visitation as well as a general indication of likely

visitation at Mount Mitchell.

PARVS data indicates that approximately 25 percent of state park visitation comes from out of state, and that out-of-state visitors averaged 4.1 trips per year to North Carolina state parks. Mount Mitchell State Park's visitation, because of the national appeal of the Blue Ridge Parkway and Mount Mitchell itself, is higher. Public-use surveys conducted at Mount Mitchell in 1977 revealed that 39 percent of vehicles entering the park were from out of state. The surveys also indicated that the average number of persons per vehicle was 3.47. Although the 1977 study is useful, an updated study, perhaps based upon visitation along the Blue Ridge Parkway, is needed. In 1991, 65 percent of the campers at Mount Mitchell came from out of state.

Only 12 percent of the restaurant users surveyed in 1977 lived within 100 miles of the park, while 54 percent lived over 500 miles away. Surveys of campers indicated that 57.2 percent lived out of state, and only 4.8 percent lived within 100 miles.

Fifty-four percent of visitors hiked the trail to the observation tower, while 17 percent of visitors used the picnic area, according to results of the 1977 surveys.

## POPULATION TRENDS

Mount Mitchell serves less to meet local outdoor recreation needs than any of North Carolina's state park units. As the previously discussed visitor surveys show, many of the park's visitors come from out of state, and few come from within a 100-mile radius. Local population trends, therefore, seem to have little effect on visitor use at Mount Mitchell.

By the year 2000, 37 percent of North Carolina's population will be 45 years of age or older. This percentage will be even higher in the Mountain region, with its large number of retirees. As the older segment of the general population increases, demand for improved quality, accessibility, and safety in parks should increase.

## OUTDOOR RECREATION PARTICIPATION IN NORTH CAROLINA

The five most popular outdoor recreation activities in North Carolina are walking for pleasure, driving for pleasure, viewing scenery, beach activities, and visiting historical sites. Three out of every four households participated in walking for pleasure at least once in the past 12 months (Table IV-1). In addition to the five most popular activities, over fifty percent of the households responding to a 1989 survey participated at least once in the following activities: swimming (in lakes, rivers, or oceans), visiting natural areas, picnicking, attending sports events, visiting zoos, and freshwater fishing.

The North Carolina Outdoor Recreation Participation Survey was mailed to 3,100 randomly selected residents in the spring of 1989. Forty-five percent, or 1,399 people, returned completed surveys. Each person receiving the survey was asked to estimate the number of times the members of his household had participated in each of 43 activities. The survey results provide good insight into the current participation of North Carolinians in a wide range of outdoor recreation activities.

**Table IV-1. Outdoor recreation activities ranked by popularity.**

| Rank | Activity | Percentage of Households Participating |
|---|---|---|
| 1. | Walking for Pleasure | 75% |
| 2. | Driving for Pleasure | 72 |
| 3. | Viewing Scenery | 71 |
| 4. | Beach Activities | 69 |
| 5. | Visiting Historical Sites | 62 |
| 6. | Swimming (in Lakes, Rivers, and Oceans) | 54 |
| 7. | Visiting Natural Areas | 53 |
| 8. | Picnicking | 52 |
| 9. | Attending Sports Events | 52 |
| 10. | Visiting Zoos | 51 |
| 11. | Fishing - Freshwater | 50 |
| 12. | Use of Open Areas | 41 |
| 13. | Swimming (in Pools) | 40 |
| 14. | Fishing - Saltwater | 38 |
| 15. | Attending Outdoor Cultural Events | 35 |
| 16. | Bicycling for Pleasure | 32 |
| 17. | Other Winter Sports | 31 |
| 18. | Camping, Tent or Vehicle | 29 |
| 19. | Softball and Baseball | 28 |
| 20. | Hunting | 28 |
| 21. | Use of Play Equipment | 28 |
| 22. | Power Boating | 26 |
| 23. | Trail Hiking | 26 |
| 24. | Jogging or Running | 24 |
| 25. | Basketball | 24 |
| 26. | Nature Study | 22 |
| 27. | Golf | 22 |
| 28. | Target Shooting | 20 |
| 29. | Water Skiing | 19 |
| 30. | Camping, Primitive | 14 |
| 31. | Tennis | 14 |
| 32. | Use Motorcycles, Dirt Bikes, ATV's | 13 |
| 33. | Use Four Wheel Drive Vehicles | 13 |
| 34. | Canoeing and Kayaking | 13 |
| 35. | Horseback Riding | 12 |
| 36. | Volleyball | 12 |
| 37. | Downhill Skiing | 12 |
| 38. | Football | 11 |
| 39. | Soccer | 7 |
| 40. | Sailboating | 7 |
| 41. | Skateboarding | 6 |
| 42. | Cross Country Skiing | 2 |
| 43. | Windsurfing | 1 |

## PRIORITIES OF PUBLIC OUTDOOR RECREATION FUNDING

The North Carolina Outdoor Recreation Survey asked residents a series of questions in order to identify and rank future demand for public outdoor recreation. Future demand was determined by asking them which activities they would have tried more often had adequate facilities been available. Respondents were then asked to rank these activities in order of importance. A scoring system was used assigning each activity a rating of high, moderate or low future demand based on the survey results.

In the second part of the analysis, the respondents' level of support for publicly funded outdoor recreation activities was determined by asking them to identify and rank those activities to which government should give highest priority when spending public money. The same scoring system used to analyze unmet demand was then applied to the survey results, with each activity receiving a high, moderate or low rating in public support for public funding.

In the final part of the needs analysis, the two ratings for each activity were combined to produce a score of one to nine that reflected both future demand and public funding priorities. The activities that ranked high in both future demand and support for public funding received the highest priority in the needs assessment. Support for public funding was given higher priority than expressed demand (Table IV-2).

Based on this analysis, many of the activities rated as the highest priorities are activities that are currently or could potentially be provided at Mount Mitchell State Park. The activities include walking for pleasure, tent camping, picnicking, visiting natural areas, viewing scenery, and trail hiking.

**Table IV-2. Priorities for Future Outdoor Recreation Activities**

| Activity | Code | Future Demand | Support for Public Funding |
|---|---|---|---|
| Walking for Pleasure | 1 | High | High |
| Camping, Tent or Vehicle | 1 | High | High |
| Picnicking | 1 | High | High |
| Beach Activities | 1 | High | High |
| Fishing - Freshwater | 1 | High | High |
| Attend Outdoor Cultural Events | 1 | High | High |
| Visiting Natural Areas | 2 | High | Moderate |
| Use of Play Equipment | 2 | High | Moderate |
| Visiting Zoos | 2 | High | Moderate |
| Visiting Historical Sites | 2 | High | Moderate |
| Bicycling for Pleasure | 3 | Moderate | High |
| Swimming (in Pools) | 3 | Moderate | High |
| Viewing Scenery | 4 | Moderate | Moderate |
| Hunting | 4 | Moderate | Moderate |
| Trail Hiking | 4 | Moderate | Moderate |
| Use of Open Areas | 4 | Moderate | Moderate |
| Target Shooting | 4 | Moderate | Moderate |
| Swimming (Lakes, Rivers, Ocean) | 4 | Moderate | Moderate |
| Fishing - Saltwater | 4 | Moderate | Moderate |

# V. SUMMARY OF LAWS GUIDING PARK MANAGEMENT

There are many federal and state statutes, state and federal executive orders, and administrative rules and policies that govern the operation of the state parks system. This chapter includes a brief discussion of the primary legal basis for the existence and operation of the state parks system. It also includes other legal issues of particular concern at Mount Mitchell State Park.

## STATE LEGAL MANDATES

### NORTH CAROLINA CONSTITUTION

Article XIV, Section 5 of the North Carolina Constitution sets overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The amendment reads in part as follows:

> *It shall be the policy of this State to conserve and protect its lands and waters for the benefit of all its citizenry, and to this end it shall be a proper function of the State of North Carolina and its political subdivision to acquire and preserve park, recreation, and scenic areas, to control and limit the pollution of our air and water, to control excessive noise, and in every other appropriate way to preserve as a part of the common heritage of this state its forests, wetlands, estuaries, beaches, historical sites, open land, and places of beauty.*

### STATE PARKS ACT

The State Parks Act (G.S. 113-44.7 through 113-44.14) sets forth a mission statement for the state parks system. It states that the system functions to preserve and manage representative examples of significant biologic, geologic, scenic, archaeologic, and recreational resources, and that park lands are to be used by the people of the state and their visitors and descendants in order to promote understanding of and pride in the state's natural heritage.

The State Parks Act also calls for development and periodic revisions of a System Plan to achieve the mission and purpose of the state parks system in a reasonable, timely, and cost-efficient manner. The Act describes System Plan components and requires that public participation be a component of plan development and revisions.

The State Parks Act also calls for the classification of park resources and development of general management plans (GMPs) for each park. GMPs are to include a statement of park purpose, an

analysis of major resources and facilities, and a statement of management direction.

## POWERS AND DUTIES OF THE DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES

This act authorizes the Department to make investigations of the resources of the state and to take such measures as it may deem best suited to promote the conservation and development of such resources. The Act also authorizes the Department to care for state forests and parks and other recreational areas now owned, or to be acquired by, the state. (G.S. 113-8)

## STATE NATURE AND HISTORIC PRESERVE DEDICATION ACT

The State Nature and Historic Preserve Dedication Act (G.S. 143-260.6) was authorized by Article 14, Section 5 of the North Carolina Constitution. It seeks to ensure that lands and waters acquired and preserved for park, recreational and scenic areas for the purpose of controlling and limiting the pollution of air and water, controlling excessive noise, and in every other appropriate way preserving as a part of the common heritage of the state, continue to be used for those purposes. The State Nature and Historic Preserve therefore provides a strong legal tool for protecting lands from incompatible uses.

The addition and removal of lands to and from the State Nature and Historic Preserve require a law enacted by a vote of three-fifths of the members of each house of the General Assembly.

All of Mount Mitchell State Park as of April 4, 1989, is in the State Nature and Historic Preserve.

## NORTH CAROLINA ENVIRONMENTAL POLICY ACT OF 1971

Recognizing the profound influence that man's activity has on the natural environment, the General Assembly passed the Environmental Policy Act "to assure that an environment of high quality will be maintained for the health and well-being of all..."

The Act declares that:

> *It shall be the continuing policy of the State of North Carolina to conserve and protect its natural resources and to create and maintain conditions under which man and nature can exist in productive harmony. Further, it shall be the policy of the State to seek, for all its citizens safe, healthful, productive, and aesthetically pleasing surroundings; to attain the widest possible range of beneficial uses of the environment without degradation, risk to health or safety; and to preserve the important historic and cultural elements of our common inheritance. (G.S. 113A-3)*

While there are other General Statutes that concern the state parks system and the environment, the above-described statutes, along with Article XIV, Section 5, of the North Carolina Constitution, largely define the purposes of the state parks system and serve to guide the operation of state park system units.

## FEDERAL LAWS

### LAND AND WATER CONSERVATION FUND ACT OF 1965

The federal Land and Water Conservation Fund Act (PL 88-578) offers protection and places restrictions on fund-assisted outdoor recreation areas.

By virtue of receiving Land and Water Conservation Fund (LWCF) grant assistance, most of the state parks system, including all of Mount Mitchell State Park, is subject to LWCF rules and regulations. Property acquired or developed in whole or in part with LWCF assistance cannot be converted to other than public outdoor recreation use without federal approval. A conversion may only take place if approved by the secretary of the Interior, and only then if replacement property of equal fair market value and reasonably equivalent usefulness and location is made.

LWCF requirements include: programming, operating and maintaining areas in a manner that encourages public participation; maintaining the property so it appears attractive and inviting to the public; maintaining property, facilities and equipment to provide for public safety; keeping facilities, roads, trails and other improvements in reasonable repair throughout their lifetime to prevent undue deterioration and encourage public use; keeping the park and facilities open for use at reasonable hours and times; and making future development meet LWCF rules and regulations. LWCF-assisted sites are periodically inspected by state and federal inspectors to ensure compliance with LWCF requirements.

## MOUNT MITCHELL STATE PARK FEASIBILITY STUDY

No master plan for Mount Mitchell has ever been developed. A feasibility study, however, was undertaken in 1977 in response to a federal study of a proposed Mount Mitchell National Park. The feasibility study evaluated existing uses in and around the park and identified land needed to protect the visual integrity of the area. The feasibility study noted that recreational development cannot be significantly expanded, and that the primary emphasis on park development should be to maintain and refurbish existing facilities.

# VI. NATURAL AND CULTURAL RESOURCE MANAGEMENT

## NATURAL RESOURCE MANAGEMENT POLICY

The Division of Parks and Recreation's approach to natural resource management is directed by the North Carolina Constitution and the State Parks Act, both of which require the management of natural resources. The constitution sets overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The State Parks Act states that unique archaeological, geological, biological, scenic, and recreational resources are a part of the heritage of the people, which "...should be preserved and managed by those people for their use and for the use of their visitors and descendants."

The North Carolina State Parks System plays an important role in maintaining, rehabilitating, and perpetuating the state's natural heritage. The natural resources of the state parks system are: high quality, rare or representative examples of natural communities; native plants and animals; geological features and landforms; water resources; and the natural processes that affect these elements. The primary objective in natural resource management will be the protection of natural resources for their inherent integrity and for appropriate types of enjoyment while ensuring their availability to future generations.

It is the policy of the Division that natural resources will be managed by allowing natural environments to evolve through natural processes with minimal influence from human activities. Resource management will not attempt solely to preserve individual species or individual process; rather, it will try to maintain all the components and processes of naturally evolving ecosystems. When intervention is necessary, direct or secondary effects on park resources will be minimized to the greatest extent possible. Intervention with natural processes may occur:

1) to correct or compensate for the disruption of natural processes caused by human activities;
2) to protect, restore, or enhance rare species;
3) to protect, restore, or enhance significant archaeological resources;
4) to construct, maintain, improve, or protect park facilities; and
5) to prevent danger to human health and safety.

## NATURAL COMMUNITIES

These descriptions follow the Classification of the Natural Communities of North Carolina: Third Approximation (Schafale and Weakley, 1990).

### FRASER FIR FOREST

Fraser Fir Forest occurs only in the highest mountain areas in North Carolina, generally above 6,000 feet. Fraser fir (Abies fraseri) strongly dominates the canopy, with lesser quantities of red spruce (Picea rubens), mountain ash (Sorbus americana), yellow birch (Betula allegheniensis), fire cherry (Prunus pensylvanica), and mountain maple (Acer spicatum) also present. The shrub layer is usually variable, depending on canopy cover, and has a high ericaceous component. The last known virgin stand of Fraser fir in the state is believed to occur on the northeast slopes near the summit of Mt. Mitchell. Covering approximately 20-30 acres, this stand is approximately 80-100 years old and supports trees that exceed 14" diameter-at-breast-height (dbh); the largest tree in the stand has a 20" dbh and is approximately 120 years old.

Although this community type is represented elsewhere in the park, nearly all of these sites were clear cut in the early 1900's, and extensive fires, fueled by logging slash, swept the area in 1916. Naturally occurring fire is essentially absent from these ecosystems, and fir species are generally unable to completely recolonize cleared and burned areas. Consequently, these forests are extremely vulnerable to human-caused disturbance; the extensive logging and severe fires that occurred early in this century destroyed most of the seed supply and left much of the area unable to support spruce-fir regeneration.

### GRASSY BALD

This community type occurs on the open slopes of high mountains, and although there are several small grassy/herbaceous communities in the park, it is questionable whether all of these areas are of natural origin. Most of these areas appear to be the result of human disturbance, particularly logging and subsequent fire dating from the early 1900's. In general, the areas that appear to be of natural origin are small, usually less than 0.5 acre, and often border High Elevation Rocky Summit communities.

Mount Gibbes supports several small Grassy and Heath Balds, but these may have also resulted from past logging. Plant species found at these sites include Roan rattlesnake root (Prenanthes roanensis), swamp bluegrass (Poa palustris), and mountain St. John's-wort (Hypericum graveolens).

## HEATH BALD

This community type is dominated by shrubs and occurs only at extremely exposed high elevation sites. Portions of the south slope of Mount Craig support small examples of this community type; it is also present on Big Tom and Balsam Cone. The south slopes of Mount Gibbes also have considerable areas of Heath Bald and Grassy Bald communities, but much of this area still shows signs of previous logging, making it difficult to distinguish natural communities. The vegetation at all of these sites is dominated by ericaceous shrubs and includes mountain rosebay (Rhododendron catawbiense), mountain laurel (Kalmia latifolia), minniebush (Menziesia pilosa), mountain highbush cranberry (Vaccinium erythrocarpum), and mountain highbush blueberry (V. constablaei). Mountain ash, mountain sweet-pepperbush (Clethra acuminata), and black chokecherry (Aronia melanocarpa) are also present in several areas. Some of these areas probably represent the transition from High Elevation Rocky Summit to Fraser Fir Forest or Red Spruce-Fraser Fir Forest communities, while others are the obvious result of disturbance.

## HIGH ELEVATION ROCKY SUMMIT (NORTHERN VARIANT)

This community type occurs on exposed slopes and ridgetops at mid to high elevations and typically features rugged rock outcrops. The park's high elevations give the rocky summit communities some of the most alpine-like affinities in the state. The western side of the summit of Mount Craig has the best representation of a large vertical outcrop community in the park. Special plant species found here include spreading avens (Geum radiatum), fir clubmoss (Huperzia appalachiana), rock gnome lichen (Gymnoderma lineare), wretched sedge (Carex misera), and Cain's reedgrass (Calamagrostis cainii).

Other smaller variants of this community type are scattered throughout the park, and many of these are seepage slopes with rich bryophyte communities. A particularly large seepage outcrop is located on the southeast side of Mount Mitchell above Camp Alice Road.

## RED SPRUCE-FRASER FIR FOREST

These forests generally occur only above 5,500 feet elevation in North Carolina, where they extend to the summits of all but the highest peaks. They are most prominent between 5,900 and 6,200 feet in the park, but appear to range from around 5,500 to 6,500 feet. This is a major community type in the park, and the highest quality stands occur on east-facing slopes; stands on west-facing slopes seem to exhibit more adverse effects from environmental stress and adelgid infestations. Red spruce (Picea rubens) is generally the dominant canopy species. Other species present in lesser quantities include Fraser fir, yellow birch, mountain maple, mountain ash, and mountain paper birch (Betula papyrifera var.

cordifolia).

Previous research in the park has documented that nearly all of the area supporting these forests was clear-cut early in this century and is now in second growth forest. Given this community type's vulnerability to large-scale disturbance, the natural long term composition of these forests was undoubtedly altered by logging and fires, which apparently contributed to the successful recolonization by yellow birch. Also, since red spruce is generally a much longer-lived species than Fraser fir (300-400 years vs. 70-100 for Fraser fir), and mature firs are being lost to the balsam woolly adelgid (Adelges piceae), the replacement pattern and overall composition may still be changing.

The shrub layer is quite diverse and includes hobblebush (Viburnum lantanoides), mountain highbush cranberry, minniebush, mountain rosebay, gooseberries (Ribes spp.), and brambles (Rubus spp.). In some cases, bramble and/or ericaceous shrub thickets appear to be replacing the coniferous forest altogether. The herb layer in most areas is quite dense with fairly high diversity, and bryophyte cover is also typically high.

## NATURAL HERITAGE PROGRAM ELEMENT OCCURRENCES

### TRAILING WOLFSBANE (Aconitum reclinatum)

This species has been assigned Candidate status for state listing as a protected species, meaning that it may become threatened or endangered as a consequence of low numbers, habitat loss, or limited distribution. It favors rich coves, seepage slopes, boulderfields, and rocky stream banks. The most recent record from the park dates from 1897, when it was collected from "the upper slopes of Mount Mitchell." The species has not been seen in recent years, and a September 1991 search was unsuccessful.

### ARCTIC BENTGRASS (Agrostis mertensii)

This species has been assigned Candidate status. It favors high elevation rocky summits and balds and has been reported from a number of locations in the park. Most reports have occurred in Heath or Grassy Bald areas and include Camp Alice (1982); the north slopes of Mount Gibbes (1982); the east side of Mount Mitchell (1982); and the Deep Gap Trail near the picnic area (1991).

### A LIVERWORT (Anomylia cuneifolia)

This species has been assigned Candidate status. The most recent record states only that it was collected between 6,400 and 6,600 feet elevation on Mount Mitchell and Mount Craig prior to 1961. No

other information was given, and there is no record of additional surveys. This species is found on the bark of Fraser firs or on moist rocks in spruce-fir forests. Additional inventory is needed to determine the effects of the decline of the spruce-fir forests on this species' status.

### A LIVERWORT (*Bazzania nudicaulis*)

This species has been assigned Candidate status. It occurs on the bark of Fraser firs or on shaded rocks in spruce-fir forests. Aside from a historical record in 1850 listing the species at 6,275 feet on Mount Mitchell, the most recent park records date from 1953, when it was collected on Mount Craig at an altitude of 6,500 feet, and a second record, dated only as "pre-1961," which lists it from Mount Mitchell at an altitude of 6,400-6,640 feet. There is no indication of the age class of trees where this liverwort is found, but the decline of Fraser fir may also signal a decline in its population.

### MOUNTAIN PAPER BIRCH (*Betula papyrifera* var. *cordifolia*)

This species has been assigned Candidate status. It is limited to high elevation forests and landslide scars and is only known from Yancey County in the state. The earliest historical record dates from 1918, when it was found on "Wilson Ridge, above railroad, Mt. Mitchell." There are no subsequent reports from this area and additional inventory is warranted. More recent records date from 1956, when the species was found "on Balsam Cone near summit, in spruce-fir forest." This record was confirmed in 1982 and again in 1992, when five trees were located on the west side of the summit in a thin area of the red spruce-Fraser fir forest. Reports from 1982 and 1991 noted mountain paper birch also occurring in gaps in the spruce-fir forest on the east slopes of Mount Mitchell. There are numerous other recent reports of the species down to about 5,000 feet on Commissary Ridge Trail, the northwest slopes of Mount Gibbes, and near Camp Alice. Much of this area is rocky and open and is dominated by fire cherry and yellow birch that established following the clear-cutting and intense fires of the early 1900's.

### CAIN'S REEDGRASS (*Calamagrostis cainii*)

This southern Appalachian endemic has a very restricted range and is listed by the Plant Conservation Program as Endangered in North Carolina, meaning that its continued existence is in jeopardy. Aside from a population in the High Elevation Rocky Summit community on Mount Craig in the park, this species is known from only one other location in the state. A 1990 survey reported that the plants were abundant in a slightly shaded and sheltered location at the base of the highest vertical cliff faces; they were also found at the top of the cliff face close to the edge, and in cracks on the vertical rock face. Trampling and erosion in the

area are potential problems and need to be monitored. Additional inventory and long-term monitoring of this species should be given high priority.

### WRETCHED SEDGE (*Carex misera*)

This species has been assigned Significantly Rare status, meaning that while it is neither threatened nor endangered, it has been deemed to require monitoring. It favors high elevation rock outcrops. Historical records dating from 1868 place the species in "open, grassy places near the summit of Mount Mitchell." A 1988 United States Fish and Wildlife Service survey reported the species as being common in the High Elevation Rocky Summit community on Mount Craig's west side. This report was confirmed in 1991.

### BOG BROOM-MOSS (*Dicranum undulatum*)

This species has been assigned Significantly Rare status. It is known to occur in only four western North Carolina counties; records of this species in the park date from 1923, when it was found "on humus, Mount Mitchell." Division biologists believe the location description given may be questionable, but also believe the species occurs in the park. Additional inventory is needed.

### SOUTHERN BUSH-HONEYSUCKLE (*Diervilla rivularis*)

This plant has been assigned Candidate status. The park is the only confirmed location in the state for the species. A 1991 survey found a single plant in a spruce-fir forest on the north side of Camp Alice Road, about halfway between Lower Creek and Shelter Trail. Additional inventory is needed.

### SPREADING AVENS (*Geum radiatum*)

The Plant Conservation Program has assigned this species Endangered-Special Concern status. Its range in North Carolina is restricted to high elevation rock outcrops in eight western counties. Reports for the park from 1970, 1979, 1988, 1991, and 1992 all list this species from Mount Craig, where it was found on the west side of the summit in the High Elevation Rocky Summit community. In 1992 potential sites that were accessible without climbing equipment were surveyed and no additional populations were found. The population on Mount Craig is small but healthy.

### ROCK GNOME LICHEN (*Gymnoderma lineare*)

This species has been assigned Threatened status, meaning that it is likely to become endangered in the foreseeable future. It favors high elevation rock outcrops and outcrops in humid gorges,

and its range in North Carolina is limited to nine mountain counties. It was reported from the park in 1972, when it was found on a rock in Lower Creek in a fire cherry-dominated community near Camp Alice. There is also a record from 1988, when it was found in the High Elevation Rocky Summit community on Mount Craig.

APPALACHIAN FIR CLUBMOSS (Huperzia appalachiana)

This species has been assigned Significantly Rare status and is known from high elevation rocky summits, seeps, and fens in only 10 mountain counties. Field surveys from 1991 listed this species from rocky areas along the Radio Tower Road on the north side of Mount Gibbes, as well as from cliffs and ledges in the High Elevation Rocky Summit community on the west face of Mount Craig. It has also been documented from a small outcrop on the northwest side of Big Tom.

MOUNTAIN ST. JOHN'S-WORT (Hypericum graveolens)

This species is a member of the Natural Heritage Program's Plant Watch List, which lists species which are rare or otherwise threatened with serious decline but which have not yet been placed on the Rare Plant List. It favors high elevation balds, outcrops, and seeps. Field surveys from 1991 list the species from the Grassy-Heath Bald area on the north side of Mount Gibbes; in herbaceous openings on the east slopes of Mount Mitchell; in landslide scars; and in herbaceous openings on Mount Craig, Big Tom, and Balsam Cone.

BLUE RIDGE ST. JOHN'S-WORT (Hypericum mitchellianum)

This species has also been assigned to the Watch List. It occurs in high elevation balds, outcrops, and seeps. A 1982 report listed the species for the park, but gave no information on abundance or habitat. Field surveys from 1991 list the species from a moist area on the northwest side of Mount Gibbes, as well as from open, herbaceous communities on Mount Craig, Big Tom, Balsam Cone, and the east slopes of Mount Mitchell.

PALE-MARGINED LEPTODONTIUM (Leptodontium flexifolium)

This moss has been assigned Significantly Rare status. Although it has been reported from High Elevation Rocky Summit communities in six mountainous counties, the most recent record for the park is vague and dates from 1957, when it was collected from "moist shaded rock, spruce-fir zone, 6500 feet, Mount Mitchell." No further information was given. Additional inventory is needed to relocate this species and determine its abundance in the park.

GRAY'S LILY (Lilium grayi)

This plant has been assigned Threatened-Special Concern status. It favors high elevation forests, bogs, and wet meadows, and is listed from nine counties in western North Carolina. However, the most recent park record for this flower dates from 1885, when it was found on the "south slope of Mount Mitchell, near summit." Although suitable habitat is abundant in the park, there are no other known reports of the species in the park. Additional inventory is needed to relocate this species and determine its abundance in the park.

A LIVERWORT (Sphenolobopsis pearsonii)

This species has been assigned Candidate status. It favors spruce-fir forests, where it grows on the bark of Fraser firs. Park records for this species date from 1953 and 1955, when it was collected from "below summit of Mt. Mitchell, 6200-6400 feet" and "within 40-50 feet of summit, 6610-6650 feet," respectively. There is no indication of the age class of trees where this liverwort occurs, but the decline of the park's Fraser fir population may also signal a decline in the populations of this liverwort. Additional inventory and monitoring to determine the results of declining spruce-fir forest habitat should be high priorities for all bryophyte species mentioned in this section.

A LIVERWORT (Plagiochila corniculata)

This species has been assigned Candidate status. It is usually found on the bark of Fraser fir trees, but it may also grow on hardwoods and rocks. The most recent records of this species from the park are dated as "pre-1961" and list its location as "Mt. Mitchell and west slope of Balsam Cone Mountain." There is no indication of the age class of trees where this liverwort is found, but the decline of Fraser fir may also signal a decline in the populations of this liverwort.

A LIVERWORT (Plagiochila sullivantii var. sullivantii)

This species has been assigned Candidate status. It favors moist rocks in spruce-fir forests and the spray zones of waterfalls. Records for the park only cite "pre-1961" collections from "Mt. Mitchell, spruce-fir zone, 6684 feet."

PURPLE FRINGELESS ORCHID (Platanthera peramoena)

This species has been assigned Candidate status. It occurs in bogs and forests and its range in North Carolina is restricted to 17 western counties. It was collected from the park in 1964 from "the edge of woods" along the Camp Alice Access Road. A 1982 report

listed the species from grassy clearings on the north side of Mount Gibbes and the east side of Mount Mitchell.

SWAMP BLUEGRASS (Poa palustris)

This species has been assigned Significantly Rare status. It occurs in Grassy Bald and Spruce-Fir Forest communities and has been reported from several locations in the park. It was reported in 1966 from spruce-fir forests on Mount Mitchell, and in 1969 from near the summit of Mount Mitchell. Field surveys from 1991 reported a small population of less than two square meters on the north side of Mount Mitchell near the Deep Gap Trail in a small rocky outcrop. Another small population was reported from the Heath and Grassy Balds on the north side of Mount Gibbes. Additional inventory is needed to verify these finds.

ROAN RATTLESNAKEROOT (Prenanthes roanensis)

This species has been assigned Significantly Rare status. It favors grassy balds and high elevation forests and outcrops. The earliest record for the park is 1958, when it was collected near the summit of Mount Mitchell. Field surveys of 1991 found it in abundance along the Radio Tower Road on the north side of Mount Gibbes. Although they extended into the Grassy and Heath Bald communities, most of the plants were on the west- to northwest-facing rocky roadcut. In one 50 foot stretch 32 flowering plants and over 100 seedlings were counted. Many of the plants appeared to have been browsed by deer. Significant populations have also been recorded on or near the Blue Ridge Parkway.

RED RASPBERRY (Rubus idaeus)

This species has been assigned Significantly Rare status. It occurs in high elevation spruce-fir forests and has been reported in North Carolina from only five mountain counties. The earliest park records for the species are from 1966, when it was collected from a "heath bald, Stepps Gap." In 1970 it was collected from "Mount Mitchell, ca. 6500 feet, opening in the spruce-fir forest." A 1988 survey reported the species as "common above 6000 feet." Field surveys from 1991 reported the species from the north face of Mount Mitchell and numerous other locations along Deep Gap Trail. It was also found in abundance on the north face of Mount Gibbes in 1991. With the decline of the area's spruce-fir forests, brambles appear to have increased dramatically and red raspberry is common throughout the park down to about 6,000 feet.

SQUARROSE PEATMOSS (Sphagnum squarrosum)

This species has been assigned Candidate status. It occurs in seepage areas in spruce-fir forests and the spray zones of

waterfalls; the park is one of only two counties in the state with records of its occurrence. Park records for this moss date from 1950, when it was collected from the "northwest slope of Mount Mitchell, moist soil, spruce-fir association, 6550 feet," and 1952, when it was collected from a "drainage seep, spruce-fir zone, 6500 feet, west slope of Balsam Cone Mountain, Black Mountain range."

WHITE MANDARIN (Streptopus amplexifolius)

This herbaceous species has been assigned Candidate status. It occurs in spruce-fir and northern hardwood forests and has been reported in North Carolina in only five mountainous counties. The most recent confirmed park record for this plant is from 1976, when it was found "near the picnic area and under the spruce-fir along the ridge." Field surveys of 1991 may have found additional populations on the north slopes of Mount Mitchell and on the east side of Deep Gap Trail under Fraser fir. The remains of fruiting stalks were found, but they were too deteriorated for positive identification. Another population was tentatively identified in the ecotone between Spruce-Fir and Heath Bald communities on the west face of the summit of Balsam Cone in 1991. Additional inventory is needed earlier in the growing season to confirm the identity and status of each of these populations.

ASH-LEAVED GOLDEN-BANNER (Thermopsis fraxinifolia)

This herbaceous species has been assigned Candidate status. It favors dry ridges, and although it has been listed in 11 counties in North Carolina, very few populations have been verified in recent years. There are three historical records of the species for the park from 1928 through 1938. All are vague regarding location, noting only that it was collected from the roadside leading up to Mount Mitchell or from somewhere on Mount Mitchell. There have been no subsequent reports of this species in the park, and additional inventory work is needed to confirm its presence.

PINEBARREN DEATH-CAMUS (Zigadenus leimanthoides)

This herbaceous species has been assigned Significantly Rare status. It favors High Elevation Rocky Summit communities and there are records for it from only four mountain counties. The only record of this species for the park dates from 1976 near Camp Alice, along the railroad grade. No further information was given, and it is unclear whether the location is inside the park.

EASTERN COUGAR (Felis concolor)

This species is listed as Endangered on both the state and federal levels. It seeks secluded areas and staff from the N.C. Museum of Natural Science have reported numerous sightings in and around the

park. Park staff reported in 1991 and 1992 that sightings continue in and around the park on an infrequent basis. However, many biologists are skeptical of any recent reports in the state, and consider the species to be of historical occurrence, with no confirmed recent records.

CAROLINA NORTHERN FLYING SQUIRREL (Glaucomys sabrinus coloratus)

This species is listed as Endangered on both the state and federal levels. It is found mostly above 5,000 feet in spruce-fir or mixed conifer-hardwood forest. The only park records date from 1983, when one pair was found on the north side of Mount Mitchell, and 1992, when park staff reported that several squirrels had been sighted on the grassy slopes below the restaurant.

SOUTHERN ROCK VOLE (Microtus chrotorrhinus carolinensis)

This species has been assigned Special Concern status, meaning that it has been determined by the Wildlife Resources Commission to require monitoring. It inhabits high elevation rocky areas, forests, and fields, and is found only in the Appalachian Mountains. Populations in the park are disjunct from the species' main range by about 250 miles. The most recent park records for this animal are from 1976, when it was collected on Mount Mitchell from a "north-facing ridge near summit, alt. about 6500 ft.," and 1991, when individuals were sighted near Deep Gap Trail on the north side of the High Elevation Rocky Summit community on Mount Craig, and on the east side of the summit of Balsam Cone.

BLACK BEAR (Ursus americanus)

Although this animal has been assigned Significantly Rare status, it is also classified as a game animal. A 1982 report compiled by park staff listed black bear as rare in the park, but tracks and a wallowing area were observed as recently as 1991. A 1992 report notes that activity in the park has been very high, with frequent sightings in the park and campground.

NEW ENGLAND COTTONTAIL (Sylvilagus transitionalis)

This animal has been assigned Significantly Rare status; and like the black bear, it is a game species. It occurs only in high elevations in North Carolina, preferring thickets and heavily wooded coniferous forests. The earliest park record for it is from 1931, when it was collected on "Mt. Mitchell, alt. 6500 ft." Field surveys of 1991 documented this animal in several areas with heavy herbaceous and shrub cover, including Deep Gap Trail on the north edge of the picnic area, and southeast of Deep Gap Trail near the summit of Balsam Cone. Park staff reported at least 12 road kills on the summit road and numerous sightings over the course of the

1991 season. Populations appear to have increased in recent years as a consequence of increases in brambles and shrub thickets in the wake of the death of spruce-fir stands.

SHARP SHINNED HAWK (Accipter striatus)

This species has been assigned Significantly Rare status. It nests in forests and woodlands and although these birds are common in the park, they are primarily spring and fall transients. A 1970 report documented an adult male passing food to a juvenile female while in flight near the summit of Mount Mitchell. While this is strong evidence of local breeding, there has been no evidence of nesting in recent years. Additional inventory is needed to determine this species' presence and status.

NORTHERN SAW-WHET OWL (Aegolius acadicus)

This species has been assigned Special Concern status. It nests in spruce-fir or spruce-hardwood forests, and although suitable habitat is abundant in the park, the species' status in the park is unclear. A 1977 record reported three nests near the junction of the park entrance road and the Blue Ridge Parkway, and Division staff note that sightings of these birds occurred frequently throughout 1991 and 1992. No nests have been seen recently, but the owls are apparently present year round.

GOLDEN EAGLE (Aquila chrysaetos)

This species has been assigned Significantly Rare status. There is apparently only one historical record of golden eagles at Mount Mitchell and that is from 1886. Although suitable habitat is present in the park, the species is so uncommon that sightings are rare to improbable, and park staff reported in 1992 that they know of no new verifiable sightings in recent years.

HERMIT THRUSH (Catharus guttatus)

This species has been assigned Significantly Rare status. The preferred nesting habitat is spruce-fir forest. Although these birds are apparently common in the park, they are not permanent residents and are primarily spring and fall transients. Natural Heritage Program records confirm sightings near the summit of Mount Mitchell in 1983; between Mount Tom and Balsam Cone in 1986; and below Stepps Gap in 1987. Although there is a 1985 report of nesting within the park, there have been no confirmed reports of nesting in recent years. Additional inventory is needed to determine the current status of the species in the park.

COMMON RAVEN (Corvus corax)

This species has been assigned Significantly Rare status. Park staff report that ravens are common in the park and that they are often seen in large numbers during late winter and early spring. A 1992 report from park staff noted that nests have been seen recently in the park, especially around Mount Craig.

MAGNOLIA WARBLER (Dendroica magnolia)

This species has been assigned Significantly Rare status. The preferred breeding habitat is spruce-fir forests, especially in immature stands, but there are no confirmed breeding records for the state. This bird is listed as a fall transient in the park. Sightings are infrequent, primarily in spring and fall, and there are no records of nesting within the park. However, there have been occasional sightings during breeding season. The loss of mature trees and constant regeneration of young trees may improve nesting habitat in the park. Additional inventory work is needed to establish the presence of breeding birds.

PEREGRINE FALCON (Falco peregrinus)

This species has been listed as Endangered at both the state and federal levels. It has been listed as a rare, but permanent, park resident, with confirmed observations in 1957, 1959, and 1968. Wildlife Resources Commission staff reported observing one adult female and an immature male during 1990 in the Mount Mitchell and Clingman's Peak area. Division staff believe the birds to be irregular visitors in the park, and report that pairs were seen in 1991 and 1992. The park contains suitable nesting habitat, and although breeding and nesting may be occurring in or near the park, no nests have been observed in the park recently.

BLACK-CAPPED CHICKADEE (Parus atricapillus)

This species has been assigned Special Concern status. It nests in high-elevation forests, particularly spruce-fir. The most recent record of the species is from 1941, when it was found on Mount Mitchell. Division staff report that black-capped chickadees were seen in the park in 1991 during the breeding season but that none had been seen in 1992. Although this species is listed as a permanent park resident, additional inventory and monitoring are needed to determine the status of the species in the park.

GOLDEN-CROWNED KINGLET (Regulus satrupa)

This species has been assigned Special Concern status. It nests in spruce-fir or mixed spruce-hardwood forests and is considered a permanent park resident. The species is currently considered to be

common in the park, and nests have been observed in 1991 and 1992. A 1991 report noted a decline in breeding populations between 1959 and 1985, and additional inventory and monitoring are needed to determine the status of the species in the park.

APPALACHIAN DISC (Anguispira mordax)

Little is known about this snail or its population, and it has been assigned Unknown status. It occurs in a variety of habitats, including areas around logs, stumps, and rocks in woods. The only park record is from 1948, and notes only that it was collected at Mount Mitchell; no other information was given. This species was previously listed as the Mount Mitchell snail and was believed to be very rare, possibly extinct, and taxonomically little-known. The 1990 Report on the Conservation Status of North Carolina's Freshwater and Terrestrial Molluscan Fauna listed its status as Undetermined, stating that "it may be more common than our few records indicate." This snail is endemic to the southern Appalachians, with records from Virginia, West Virginia, Kentucky, Tennessee, North Carolina, and Alabama. In North Carolina, there are records from only four counties. Additional inventory and study are needed.

SHORT-NOSED SCORPIONFLY (Brachypanorpha carolinensis)

This species has been assigned Significantly Rare status. The only park record for this species dates from 1952 and notes only that it was collected at Stepps Gap; no further information was given. Additional inventory is needed to determine the status of this and other invertebrates.

LONGTAIL SALAMANDER (Eurycea longicauda)

This amphibian species has been assigned Special Concern status. It is usually associated with limestone and shale substrates, and is found in caves and along rocky streams and bottomlands. A 1991 survey reported the species from the park, but no other information was given and its status in the park remains largely unknown. Even though typical habitat is not abundant in the park, Lower Creek or the various springs in the park may provide appropriate habitat. Additional inventory is needed to determine this species' status.

NORTH CAROLINA FUNNELWEB TARANTULA (Microhexura montivaga)

This species has been assigned Significantly Rare status. The earliest records of this species for the park date from 1925 and report only that it was found in "spruce-fir forest on summit of Mt. Mitchell." This species had been collected yearly in the park in 1977, 1978, 1979, and 1980. Field surveys from 1991 discovered what appeared to be evidence of funnelweb tarantulas in the High

Elevation Rocky Summit community on Mount Craig and in a rocky opening in spruce-fir forest on the east side of the summit of Balsam Cone Mountain. Additional field work is needed to verify this species' presence and status.

### A SMALL CARRION BEETLE (*Adelopsis mitchellensis*)

This beetle species has been assigned Significantly Rare status. A 1973 report lists this species for "balsam fir forest on the summit of Mt. Mitchell," but gives no other information. It was also reported "from Black Mountains in Mount Mitchell State Park" in 1980. The species is restricted to the Black Mountains, but there is no indication of how abundant it is within that restricted range. Additional work is needed on this and other invertebrates.

### A GROUND BEETLE (*Agonum gracilentum*)

Little is known about this long-legged beetle or its populations in the state, so it has been assigned Unknown status. The only park record for this beetle is from 1977 and lists it as occurring in the Black Mountains in Mount Mitchell State Park. No other information was given.

### A GROUND BEETLE (*Nebria appalachia*)

This beetle has been assigned Unknown status. The only park record for this species dates from 1930, when it was collected on "Mt. Mitchell just above Camp Alice" at about 6000 ft.

### A GROUND BEETLE (*Pterostichus palmi*)

This beetle has been assigned Unknown status. The most recent record dates from 1977, when this beetle was listed for "Black Mountains in Mount Mitchell State Park." No other information was given, and little is known about the species.

### A GROUND BEETLE (*Pterostichus carolinus*)

This beetle has been assigned Unknown status. The only park record of this beetle is from 1977 for "the Black Mountains in Mount Mitchell State Park." No other information was given, and little is known about the species.

### A GROUND BEETLE (*Pterostichus mancus plethorus*)

This beetle has been assigned Unknown status. The earliest park record is from 1930, when this species was collected on "Mount Mitchell, elevation 5000-6711 feet." It was also listed as occurring in the park in 1977, but no other information was given, and little is known about the species.

### A GROUND BEETLE (Trechus carolinae)

This beetle has been assigned Significantly Rare status. It was collected from the summit of Mount Mitchell in 1976, but no additional information was provided. This beetle is believed to be in the park but no other records are known.

### A GROUND BEETLE (Trechus mitchellensis)

This beetle has been assigned Significantly Rare status. Its preferred habitat is believed to be moss carpets in spruce-fir forests. It was reported from the park in 1960, when it was found on Mount Mitchell, and again in 1967, when it was collected on Big Tom. No other information was given.

## REGISTERED NATURAL HERITAGE AREA

### MOUNT MITCHELL REGISTERED NATURAL HERITAGE AREA

This area covers 1,395 acres and includes Mount Mitchell, the highest peak east of the Mississippi River, and four other peaks over 6,500 feet. On clear days, the highest peaks offer unsurpassed vistas of the Black Mountains and the nearby Blue Ridge Mountains. Situated along the crest of the Black Mountains, these high Southern Appalachian peaks contrast sharply with others farther north by supporting many cold weather animal and plant communities that possess an affinity for alpine environments. Many of these species are restricted to the highest peaks and the park supports disjunct examples of ecosystems more commonly associated with southern Canada. Numerous plant and animal species uncommon to North Carolina occur in this area, and the park supports the state's best developed examples of Fraser fir forest. Severe climate and strong winds combine to stunt tree growth and contribute to the production of unusual "fir waves," formed by dwarfed yellow birch and windthrown fir trees.

Substantial sections of the area's higher elevation Fraser Fir Forest communities have been killed from woolly adelgid infestations; Spruce-Fir Forest communities are also in decline and are suspected to be suffering from stress linked to concentrated air pollutants trapped in the mountaintop fogs that frequently cover the range. Regeneration in these forests is patchy, and large areas that formerly supported fir or spruce-fir stands are now dominated by shrubby and herbaceous species.

Heavy visitation has also affected some sites in the Registered Natural Heritage Area. Trampling in high use areas, such as the summit and picnic area, has resulted in soil compaction, erosion, and vegetation losses. Trampling along trails, erosion, unauthorized camping, and occasional callous destruction of vegetation have also occurred. Deep Gap Trail and the summit of Mount Craig have suffered the most notable damage. The high number of

sensitive plant populations on the summit of Mount Craig have suffered from trampling and need additional monitoring. Monitoring programs should follow the guidelines suggested by the U.S. Fish and Wildlife Service "Spreading Avens Recovery Plan" and the "Roan Mountain Bluet Recovery Plan."

### POTENTIAL ADDITIONS TO THE REGISTERED NATURAL HERITAGE AREA

If the privately owned land on the south end of the park near Mount Gibbes and Clingman's Peak is acquired, then those areas may be eligible for inclusion in the Registered Natural Heritage Area. A number of sensitive species, such as Roan rattlesnakeroot, are already known from this area and more are likely to be found with additional inventory.

## CULTURAL AND RESOURCE MANAGEMENT ISSUES

### NATURAL RESOURCE INVENTORIES

Although the park has been the subject of numerous environmental studies, it has never received comprehensive botanical and zoological surveys. A comprehensive, updated natural heritage survey is needed for the entire park. This inventory would provide the baseline data for a natural resources monitoring program and could also provide for expanded interpretation and education programs. Given the age of much of the park's current natural heritage data base, emphasis should be placed on locating and determining the status of the rare species listed in this chapter.

### RESEARCH NEEDS

This park has the most extensive assortment of sensitive plant and animal species in the state parks system, and given the extent of forest disturbance and decline in the park, it would be wise to monitor these species as closely as possible. Research is needed on the interactions and impacts of air pollution, acid deposition, and the balsam woolly adelgid. Each of these has resulted in extensive and long-lived damage to the park's ecosystems. The secondary effects on the habitat and condition of other plants and animals associated with the Fraser Fir and Spruce-Fir Forest communities may be just as devastating but less visible. Long-term monitoring of these areas should prove beneficial to the development of any environmental management strategy.

Mount Mitchell State Park has the largest number of research activities by outside entities of all the parks in the system. Although this research is clearly needed, the monitoring, assistance, and follow up required of the park staff strains already limited staff time. Additional ranger staff are needed for this and other resource management activities.

## FOREST DECLINE

Presently, the most serious threat to the park's forests is the balsam woolly adelgid, an insect pest introduced from Europe in the early 1950's. The adelgid was first observed near Mount Mitchell in 1955, and by 1958 the area's Fraser fir forests were heavily infested. Even though attempts have been made in recent years to protect selected areas, the infestation persists and continues to have a major impact.

Other environmental factors, including air pollution such as acid deposition, may be contributing factors, but they are difficult to quantify because of the interacting adelgid insect problem. Although natural regeneration of the Fraser fir and red spruce communities is found scattered throughout the park, these types continue to be extremely endangered. The development of these mature communities is no longer occurring in Mount Mitchell State Park.

Although extensive research has been undertaken to determine the causes of forest decline on Mount Mitchell, scientists remain unable to reach a consensus on a single cause. Although large-scale, conspicuous damage to the park's Fraser fir stands has been caused by the balsam woolly adelgid, it is likely that other factors, including acid deposition and atmospheric pollutants trapped in fog, are interacting to cause the deterioration of the park's spruce-fir forests.

Because of the extraordinarily complex combination of factors involved, any solution to these problems is likely to be equally complex. Past attempts at treatment have failed, and there is no indication that the use of either standard or novel treatments will have any success in reversing the damage. Given the multitude of factors involved, aggressive treatments, including mass experimental plantings, or the renewed and widespread use of insecticides, would be very costly and are not guaranteed to work. The Division's natural resource management policy is to manage for natural processes, and, when the restoration of natural processes is not feasible, to allow the park's ecosystems to naturally adjust to the disturbance. If the forests do not regenerate, it is likely that these areas will eventually be vegetated by grasses and shrubs, much like the balds found in other sections of the Southern Appalachians.

## BEAR MANAGEMENT

Black bears are a natural component of the park's ecology and they have been seen frequently in the last several years. Park staff have reported that foraging activity has increased in and around the campground. Given the park's high levels of visitation, the potential exists for foraging bears to be in conflict with visitors. Current efforts to reduce bear visitor conflicts are effective. Any bears that become nuisance animals or are deemed

dangerous animals should be controlled and/or removed in cooperation with the Wildlife Resources Commission.

## OBSERVATION TOWER

The State Highway Patrol's backup communications antenna is located on the observation tower at the summit of Mount Mitchell. The generator for this antenna provides power to the concession stand in the event of a power outage. The presence of communications antennas within state parks is aesthetically displeasing and usually inconsistent with the regulations of the State Nature and Historic Preserve and the Land and Water Conservation Fund. Because this antenna and generator serve the park visitor, they should remain in their current locations; however, when the technology is such that the backup antenna is not necessary, it should be removed.

## HUNTING

In 1969 an exchange of property between the U.S. Forest Service and the State of North Carolina took place to provide land for the park water supply. Annual hunting rights from November 1 through December 31 were reserved for this property by the Wildlife Resources Commission; Stepps Gap Road was designated for management and hunter access. This arrangement adversely affects park operations by requiring the opening of this gate outside of normal park hours. Also, allowing hunting on state park land is inconsistent with normal Division policy, and has resulted in difficulties in staff enforcing park regulations concerning hunting. The hunter access and actual hunting on property marked with state park boundary signs have resulted in park visitor-hunter conflicts.

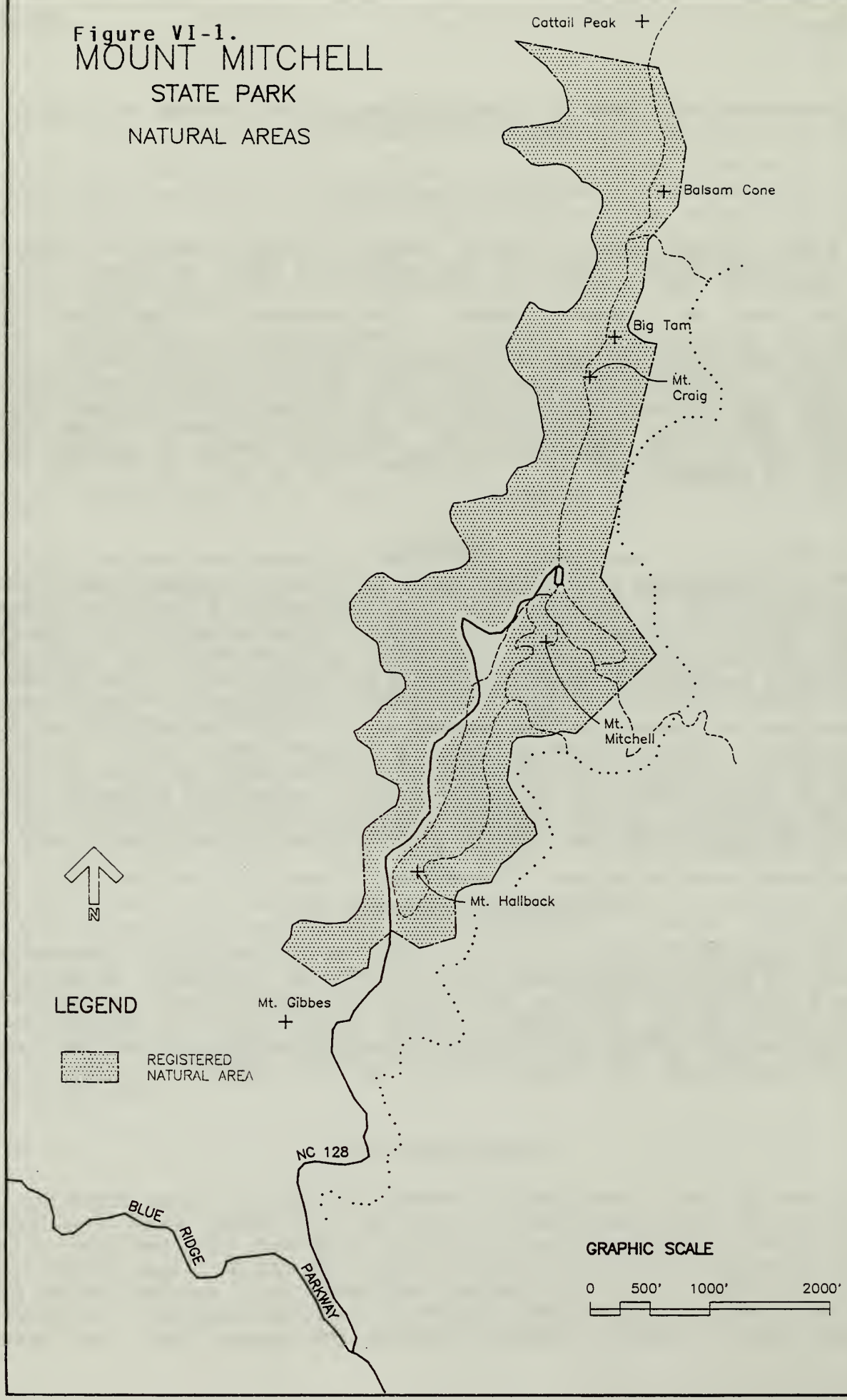
## RESOURCE MANAGEMENT PLAN

A comprehensive, park specific resource management plan addressing these and future management issues should be developed. This plan should include detailed actions whose implementation will prevent or correct threats or damage to significant natural resources. The use of new and additional district resource management specialists would facilitate the implementation of this plan.

Figure VI-1.

# MOUNT MITCHELL STATE PARK

## NATURAL AREAS



# VII. PHYSICAL PLANT INVENTORY

## FACILITY INVENTORY AND INSPECTION PROGRAM

The buildings in state parks are needed for park operations and visitor services. These buildings and facilities are essential components of protecting the public's health and safety. They include facilities providing safe drinking water, restrooms, and electricity, as well as recreation facilities such as bathhouses, group camps, and cabins. Without proper maintenance, these facilities are, at best, a disservice to the citizens who use them, and at worst, potentially harmful.

The Facility Inventory and Inspection Program (FIIP) is a computer-based system used to track the condition, maintenance needs, and repair costs of every building in the state parks system. A principal objective of FIIP is to identify deficiencies that may affect health, fire, or life safety. Other objectives are to identify accessibility deficiencies and other significant maintenance-related deficiencies.

During a field evaluation of each facility, deficiencies are given priority ratings of critical, serious, or minor. The deficiencies are classified in nine basic categories: site (the grounds and walkways surrounding the building); exterior envelope; interior envelope; fire/life safety; handicapped accessibility; public health; heating/ventilation/air conditioning (HVAC); plumbing; and electrical.

The field evaluation begins with an inventory of all structures in the park. The results of the inventory are presented using the building name and state property numbers as identification. Next, the types of repairs and repair costs are listed for each building. Finally, the cost summary for the park is given using the nine basic categories of repairs (e.g. exterior envelope) and the three levels of deficiencies (critical, serious, and minor).

## MOUNT MITCHELL STATE PARK BUILDING INVENTORY

| CODE | BUILDING NAME | IN USE |
|---|---|---|
| 001001 | Park Office and Toilet Bldg | Y |
| 001002 | Restaurant | Y |
| 001003 | Restaurant Barracks | Y |
| 001004 | Personnel Barracks | Y |
| 001005 | Maintenance Building | Y |
| 001006 | Ranger Residence | Y |
| 001007 | Ranger Residence | Y |
| 001008 | Ranger Residence | Y |
| 001009 | Storage Building | Y |
| 001011 | Pumphouse | Y |
| 001012 | Picnic Shelter | Y |
| 001013 | Picnic Shelter | Y |
| 001014 | Concession Stand | Y |
| 001015 | Museum | Y |
| 001016 | Observation Tower | Y |
| 001018 | Sediment Reservoir Building | Y |
| 001019 | Pumphouse | Y |
| 001023 | Toilet Building | Y |
| 001024 | Pumphouse (across from office) | Y |

## FACILITIES INSPECTION AND IMPROVEMENT

Buildings at Mount Mitchell are generally in good to fair condition. Six building do need work totalling over $10,000 each, and these six together account for over 80 percent of the total work cost estimates for the park. Stone work and heating systems are major factors in the high costs of repairing these buildings.

Three buildings have handicap accessibility problems: the park office and toilet building; the restaurant; and a picnic shelter. The office/toilet building is completely inaccessible, and needs parking, entry, and toilet room modifications for a cost of $7,306. The restaurant is accessible, but its toilet facilities are not, and modifications are estimated at $5,057. The picnic shelter needs ramp access from the parking lot at an estimated cost of $3,506. The total cost of accessibility is $15,868.

MAINTENANCE NEEDS

| Bldg. # | Building Name/Need | Repair Cost |
|---|---|---|
| 001001 | **Park Office & Toilet Building** | $ 24,370 |
| | Replace all fluorescent fixtures | 2,138 |
| | Provide H/A parking, ramp, entry, toilets | 7,306 |
| | Replace furnace | 9,075 |
| | Add exhaust fans in toilets | 300 |
| | Replace vinyl flooring in toilets | 1,335 |
| | Add cleanout on sewer line | 150 |
| | Replace wood windows with vinyl clad | 3,587 |
| | Replace acoustical ceiling | 480 |
| 001002 | **Restaurant** | $ 108,285 |
| | Replace damaged CMU in chimney, add cap | 1,471 |
| | Repoint stone porches, walls | 28,443 |
| | Add insulation to attic | 8,928 |
| | Replace siding at clerestory | 4,410 |
| | Remodel toilets to meet ADA requirements | 5,057 |
| | Replace heating system | 45,000 |
| | Rebuild stairs for correct head room and stair height | 341 |
| | Replace pipe hangers | 1,314 |
| | Replace missing diffusers & broken fixtures | 4,824 |
| | Replace missing foundation vent cover | 53 |
| | Rehang gutters | 180 |
| | Replace acoustic & fiberboard ceilings | 17,193 |
| 001003 | **Restaurant Barracks** | **450** |
| | Add vent fans - 3 baths | |
| 001004 | **Personnel Barracks** | **29,940** |
| | New lights @ stair, kitchen & rec room | 2,655 |
| | Add receptacles; GFCI as required | 683 |
| | Smoke detectors to be hard-wired, interconnected | 330 |
| | Add 1 hr wall with 1 hr door at stair | 2,085 |
| | Replace hollow core doors with solid core | 4,125 |
| | New drip edge, roofing felt; fiberglass shingles | 3,195 |
| | Add vent fan -- main bathroom | 150 |
| | New HV, water heater | 12,834 |

| Bldg. # | Building Name/Need | Repair Cost |
|---|---|---|
| | Install gutters on front of building | 929 |
| | Replace existing WC's with low-flow toilets | 2,955 |
| 001005 | **Maintenance Building** | **18,615** |
| | New vinyl clad windows & storms | 6,855 |
| | Replace water damaged window sills, OH doors | 4,275 |
| | Replace damaged flashing & decking | 2,760 |
| | Repaint fire walls | 4,500 |
| | Add rain diverters @ personnel door | 225 |
| 001006 | **Ranger Residence** | **7,463** |
| | Rebuild weakened chimney | 1,838 |
| | Add vent fan in bath | 150 |
| | Add proper foundation vent covers | 338 |
| | New windows & storm doors/windows | 5,139 |
| 001007 | **Ranger Residence** | **7,356** |
| | Replace damaged porch slab | 371 |
| | Repair damaged ceiling | 117 |
| | Regrade for proper drainage | 1,349 |
| | Replace back door with metal or vinyl clad | 398 |
| | Replace inefficient furnace with gas-pac | 5,121 |
| 001008 | **Ranger Residence** | **11,360** |
| | Replace doors with metal or vinyl clad | 795 |
| | Replace damaged porch slab | 371 |
| | Regrade for proper drainage | 1,349 |
| | Replace inefficient furnace with gas pac | 5,121 |
| | Replace kitchen cabinets | 3,725 |
| 001009 | **Storage Building** | **782** |
| | Replace rotting door | 285 |
| | Replace windows | 354 |
| | Add louvered door | 113 |
| | Patch CMU | 30 |
| 001011 | **Pumphouse** | **503** |
| | Repair damaged door | 113 |
| | Seal plywood with waterproof coating | 345 |
| | Replace damaged shingles | 45 |

| Bldg. # | Building Name/Need | Repair Cost |
|---|---|---|
| 001012 | **Picnic Shelter** | **3,900** |
| | Repaint masonry chimney & floor; seal floor | 2,655 |
| | Replace wood shake roof with fiberglass | 1,245 |
| 001013 | **Picnic Shelter** | **3,915** |
| | Replace wood shake roof with fiberglass | 1,260 |
| | Repaint masonry chimney, floor; seal floor | 2,655 |
| 001014 | **Concession Stand** | **14,022** |
| | Replace 3 doors | 1,082 |
| | Replace buckled sidewalk | 1,571 |
| | Replace existing WC's with low-flow toilets | 11,370 |
| 001015 | **Museum** | **1,838** |
| | Replace damaged siding; reseal all | 1,568 |
| | Replace damaged acoustical tile | 270 |
| 001016 | **Observation Tower** | **4,344** |
| | Seal concrete | 1,734 |
| | Replace 2 broken glass blocks | 120 |
| | Repaint stone surface | 2,490 |
| 001019 | **Pumphouse** | **1,430** |
| | Replace damaged decking | 248 |
| | Replace wood shakes with new felt, drip edge, fiberglass shingles | 624 |
| | Replace & repaint siding in gable ends | 116 |
| | Replace damaged rafters | 443 |
| 001023 | **Toilet Building** | **8,907** |
| | Replace roofing with new felt, drip edge & FG shingles | 1,835 |
| | Replace & re-grout loose floor tiles | 113 |
| | Add vent fan | 1,050 |
| | Replace existing WC's with low-flow toilets | 4,260 |
| | Finish interior walls with polyurethane | 1,650 |
| | **Total - FIIP Maintenance Items:** | **$ 247,477** |

## FACILITY REPAIR NEEDS COST SUMMARY

| DEFICIENCY CATEGORY | PRIORITY 1 (CRITICAL) | PRIORITY 2 (SERIOUS) | PRIORITY 3 (MINOR) | CATEGORY SUBTOTAL |
|---|---|---|---|---|
| SITE | 0 | 4267 | 0 | 4267 |
| EXTERIOR ENVELOPE | 1358 | 64337 | 18375 | 84070 |
| INTERIOR ENVELOPE | 6210 | 6398 | 24240 | 36848 |
| FIRE/LIFE SAFETY | 330 | 0 | 0 | 330 |
| HANDICAPPED ACCESS | 0 | 12362 | 0 | 12362 |
| PUBLIC HEALTH | 0 | 150 | 0 | 150 |
| HVAC | 0 | 74130 | 5121 | 79251 |
| PLUMBING/UTILITY | 0 | 19900 | 0 | 19900 |
| ELECTRICAL | 683 | 4793 | 4824 | 10299 |
| | 8581 | 186337 | 52560 | 247477 |

Deficiencies that are a threat to fire and life safety or the health of an individual are considered to be "critical." A "serious" deficiency is one that is not considered a threat to fire and life safety, but which could cause further damage to the structure if left uncorrected. This category usually includes building code violations. "Minor" deficiencies are those requiring general maintenance and repair.

**Figure VII-1.**

# MOUNT MITCHELL
## STATE PARK

BUILDING LOCATIONS

## MOUNT MITCHELL STATE PARK ROAD AND UTILITY INVENTORY

This inventory gives a brief description of the park infrastructure (roads, water, sewer, electrical, and telephone) and makes general recommendations on upgrading and maintaining these systems. The information is based on a one-day inspection of the park facilities on May 29, 1992, with park personnel. Other information comes from the Institute for Transportation, Research and Education's (ITRE) study on roads, original construction drawings, and past experience with construction projects at the park.

Mount Mitchell is the oldest state park in North Carolina and is one of the four state parks in which the Civilian Conservation Corps (CCC) worked. Of the four parks, Mount Mitchell has the fewest facilities actually constructed by the CCC. A couple of old foundations are the only remains of the CCC era. A lot of facilities were designed but never built by the CCC.

The majority of the infrastructure and facilities were built in the early to mid-fifties. Another major era of construction was the mid-sixties.

The restaurant and its personnel barracks were built in 1952, along with a portion of the upper concession building. The observation tower, museum reservoir, water system and park personnel barracks were constructed in 1958. In 1965, a new park office, summit concession building and underground electric distribution were installed. Since the late 1970's, there has been a capital improvement renovation project at the park in every year that there has been capital funding except one.

The environment is so severe due to freeze-thaw cycles, heavy rains, snows, strong winds, acid rains, and foggy conditions that the infrastructure life expectancy is only half what it would normally be. On top of this, construction costs generally run from 50 to 100 percent more due to the remoteness of the site and weather conditions. For these reasons, a major portion of Division capital improvement funds are spent at this park.

This road and utility inventory is divided into five major sections: roads and parking areas; water system; sewer system; electrical system; and telephone system. Each section is broken into two parts: existing conditions and system recommendations. At the present time, the majority of the infrastructure and facilities are in fair shape.

# ROADS AND PARKING AREAS

## Existing Conditions

According to the Institute for Transportation, Research, and Education's (ITRE) study completed in March 1990, there are 2.43 miles of paved and 7.56 miles of unpaved roads in the park. There are 11,873 square yards of paved parking lots and 500 square yards of unpaved parking areas. The typical park road section consists of a 19-foot-wide pavement with three-foot-wide shoulders. The main road has an eight-inch stone base with a 2.5-inch layer of I-2 asphalt. The paved parking lots have a 6-inch stone base with a 2.5-inch asphalt layer.

The main park road is currently considered a state primary road (NC-128) and is the only primary road within the N.C. Department of Transportation Highway System that begins and ends without crossing another state numbered and maintained road. The existing main park road was resurfaced by the N.C. Department of Transportation in 1989 and appears to be in good condition.

The existing summit parking lots and restaurant parking lot were resurfaced in 1977 and are in poor shape. There is a lot of block cracking within the parking lots, especially in the restaurant lot. This cracking appears to be caused by the extreme weather conditions, especially during the freeze-thaw cycle in the spring. The asphalt appears to be okay.

The road shoulders are in fair shape on the cut side of the road; but on the fill side of the road, there are several depressions where the shoulder has eroded or slipped away, especially in the curved portion of the road where the wooden guard is installed. The ditch lines are in poor shape due to trees being allowed to grow in the ditch line and rock slides filling in some of the ditch lines.

There is approximately 3,400 linear feet of wooden guard rail within the park. It is in good condition, having been replaced in mid-1993. The maintenance area parking lot was resurfaced in 1993. The camping area and personnel barracks parking lot has a 1-1/2 inch layer of asphalt over approximately four to six inches of gravel. It was resurfaced in the summer of 1993.

$5,000 was expended in 1993 for grading and gravel on the Camp Alice Road. An annual maintenance budget of $1,000 exists under the N.C. Department of Transportation and Division road agreement for continued maintenance.

The majority of road culverts are corrugated metal. All the culverts are in good shape except two, according to the ITRE report. They will need to be replaced.

The parking lots are in need of striping. There are no parking bumpers in the restaurant or summit parking areas.

### Recommendations

The west shoulder of the main entrance road should be brought up to grade at the low spots. The current N.C. Department of Transportation Agreement will satisfactorily cover this. The N.C. Department of Transportation may cover all the cost.

The summit and restaurant parking lots need extensive crack repair work, using liquid asphalt sealant to seal the large block cracks. This would extend the life of the parking lot a few more years. Parking bumpers need to be installed in the restaurant and summit parking lots. Estimated costs are $7,500.

## SEWER SYSTEMS

### Existing Conditions

There are currently five active sewer systems in the park. All the drainfield and manholes were checked for leakage. The sewage systems were all replaced in 1985-86, except for the office sewer. Below is a description of the four sewage systems.

Summit Area System - This system has a 10,000-gallon-per-day septic tank and a 1,800-gallon dosing tank with a five-inch miller siphon. The sewage leaves the dosing tank and travels through a six-inch PVC sewer pipe to the sand filter bed located approximately 200 feet from the dosing tank. A pressure manifold then distributes the sewage through three 180-foot 3-inch PVC sewer lines with 1/4 inch holes spaced every five feet under low pressure.

This system was replaced in 1985 and again in 1986 and 1989. The first time a conventional system was installed with five lines of 4-inch perforated pipe, the sewage ran out a weak spot in the retaining wall at the beginning of the drainfield. A low pressure system was designed in 1986 by the N.C. Division of Health Services. This system failed again in 1989 due to the blockage of the small diameter holes. It was replaced in 1989 by in-house maintenance forces.

The rock retaining wall supporting the side of the sand filter bed is deteriorated and in need of repair. The sand filter bed is acting as a conventional subsurface sewage system in lieu of discharging directly into a stream, which is permitted through the N.C. Division of Environmental Management. This system has a design flow of 4,500 gallons per day.

Figure VII-2. Mount Mitchell Road System

Camping, Maintenance, and Personnel Barracks Sewer System. This system is located across the road approximately 100 feet away from the maintenance shop. It has a 3,000-gallon septic tank with a 600-gallon dosing siphon tank. The tank has a four-inch miller siphon. The sewage leaves the dosing tank and is distributed to the drainfield by an eight-inch pressure manifold. There are four 125-foot nitrification trenches on the left side of the field and five 100-foot nitrification trenches on the right side. There are valves on all nine lines so flow rates may be adjusted. A subsurface under-drain drainage ditch runs above the drainfield on both sides.

This system was installed in 1985. The collection system was also replaced in 1986 except for the outfall from the personnel barracks, which was replaced in 1990. There are approximately 800 linear feet of six-inch PVC sch.40 sewer line embedded in sand with seven precast concrete manholes.

An inspection was made for groundwater intrusion into the lines, but very little was found. It had rained for two days before the inspection. An inspection of the drainfield did reveal a small stream of water running out the upper end of the drainfield on the left side. It could not be determined if sewage was running out at this location. It appeared that a wet-weather spring has developed. The drainfield on the left side was replaced in 1991 due to a surface water problem. An underground drainage ditch was replaced in hopes that this would solve the problem. It apparently has not. Sewage flow for the upper three drainfield lines has been cut off to see if this stops the leakage. The design flow for this system is 1,800 gallons per day. At the present time, there is no way to determine how much sewage is going into the drainfield.

Restaurant Sewer System - This system is located across the road from the restaurant. It consists of a 5,000-gallon, built-in-place septic tank with an 800-gallon dosing tank with a four-inch miller dosing siphon. The sewage leaves the dosing tank and feeds an eight-inch pressure manifold distribution system. The nitrification field consists of 10 140-lineal foot drain lines. There is an under-drain drainage ditch above the upper drainfield. The drainfield appears to be working properly. The collection system for this system begins at the restaurant with a 1,200 gallon precast grease trap. This grease trap was recently pumped. It then flows into a precast manhole and goes into the septic tank approximately 160 feet away. There are three manholes on this system. The outfall line is six-inch sch.40 PVC bedded with sand. This system was installed in 1985-1986 along with rest of the sewage contracts. It has a design flow of 2500 gallons per day.

Restaurant Personnel Barracks Sewer System - This system is located between the restaurant personnel barracks and the restaurant. It is a conventional septic system with a 1,200-gallon septic tank with three 100-foot drain lines. It was installed in 1985 in lieu of replacing the outfall line to the restaurant at a cost of $2,500. This system seems to be working. There are no inspection

risers on the tank, and the tank hasn't been pumped since its installation.

Office Sewer System - This system is located in the front yard of the office. It consists of a 1200-gallon septic tank with a distribution box. The size of the drainfield is unknown, but it appears to be only two lines approximately 80 linear feet in length. This system was installed in 1965. There is a large concentration of surface waters, which appears to be a wet weather spring in close proximity to the drainfield. It does not appear to have sewage in it. The septic tank does not have a riser on it. The tank was pumped out in 1989. The drainfield is part of the lawn, so it is well maintained.

## Recommendations for the Sewer Systems

For long-term sewage treatment, a feasibility study needs to be conducted on the existing park sewage systems needs so that the most economical way to handle the sewer problems at Mount Mitchell can be recommended. The estimated cost for such a study is $10,000. It should be undertaken prior to making any non-urgent or expensive repairs to existing systems. Individual sewer system recommendations follow.

Summit Area Sewer System - Solids appear to be getting into the dosing tank. A complete inspection of the inside of the tank is needed. The 10,000-gallon tank needs to be pumped out and the sanitary tee inspected as well as the tank. A special pumping permit should be obtained to pump sewage sludge on site instead of hauling it off. This can be obtained from local health officials. Low-flush fixtures were installed in 1985, but have never worked properly. These fixtures should be replaced with 1-1/2-gallon-per-flush fixtures by Flushmate-Quantum, water closets by Mansfield. Also, the lavatories need flow-restrictor faucets installed.

The rock retaining wall needs masonry tuck pointings if we continue to use the sand filter bed. At the present time, health officials do not know where all the sewage flow is going after it leaves the sand filter bed, other than that it is leaking through existing rock formations. If and when it ever reaches the surface, Health Services will require a new system to be built. Estimated cost for a complete replacement could run $35,000 to $100,000. The repair items being recommended are estimated to be approximately $25,000.

Camping Maintenance and Personnel Barracks Sewer System - This system drainfield is too small to adequately function given the present soil conditions and loading requirements. The Division has hired a consultant to design an expansion of the present drainfield and to redesign the piping arrangement of the present one. Estimated design and construction cost is $70,000.

Restaurant Sewer System - This system appears to be functioning adequately. Some landscaping needs to be done on the drainfield and a siphon counter needs to be installed on the dosing tank. The estimated cost is $6,000.

Restaurant Personnel Barracks - This system needs the tank pumped and two septic tank risers. The estimated cost is $500.

Office Sewer System - This system needs to be checked with sewer dye to verify that the sewage is not leaking out into the wet weather spring. A riser needs to be installed on the tank and the tank pumped out if necessary. The estimated construction cost is $750.

## WATER SYSTEM

### Existing Conditions

There have been five different capital improvement projects involving improving or upgrading the water system since 1980. Today the water system is in good shape, except for the section of waterline that runs underground from zero curve reservoir to the restaurant reservoir. A description of each component of the system follows.

The primary water source for the park is a spring located at Camp Alice. The spring produces from 5 GPM to 40 GPM, depending on the season and rainfall. The spring was developed and piped to the water storage tank in 1985 under the sewer improvement contract at a cost of $5000. The spring has a plastic tarp over it that is badly deteriorated and leaking. A two-inch galvanized pipe is enclosed within a two-foot high concrete dam, and #67 washed stone covers the spring.

The spring water gravity flows into a 20,000-gallon steel storage tank at Camp Alice. A pump station with two 10-horsepower Grundfos Pumps, pumps the water to zero curve reservoir through an above-ground two-inch galvanized steel pipe. This distance is approximately 1500 linear feet.

Zero Curve Reservoir is a concrete storage reservoir that holds 25,000 gallons. It is the primary storage reservoir for the park. The age of this reservoir is not known. The water then gravity-feeds back to the camping area, maintenance, ranger residences, park personnel barracks, and restaurant reservoir. This section of waterline has not been replaced, and it is underground. There are approximately 2800 lineal feet of two-inch galvanized water line in this section.

A secondary pump station is located at Zero Curve. Here, the water is chlorinated before being pumped to the summit reservoir at the top of the mountain. There are two 7-1/2 horsepower Grundfos Pumps at Zero Curve. All four of the high pressure pumps, pump replace-

ment, and steel reservoir at Camp Alice were replaced in 1988.

The museum reservoir is a 20,000-gallon concrete storage reservoir. It was renovated in 1982 when the tower was renovated. This reservoir supplies water to the concession, toilet buildings, and picnic areas. The two-inch galvanized distribution system to the concession building was replaced in 1990 with two-inch schedule 40 PVC pipe. Water runs approximately 300 feet to the concession building.

The majority of the distribution system was replaced in the 1990 water system contract when approximately 5,650 linear feet of two-inch galvanized steel waterline (above ground) and 915 linear feet of three-inch galvanized steel waterline (underground) were replaced.

The concrete restaurant reservoir was replaced with a 15,000-gallon steel reservoir in 1990. It supplies the restaurant, restaurant personnel, barracks, and the park office. The office waterline, which is approximately 3000 lineal feet from the restaurant, was installed in 1980.

Besides the spring, a deep well was drilled in 1989 as an alternate water source. The well is six inches in diameter and is 700 feet deep. It produces 8-1/2 gallons per minute and has a three-horsepower Grundfos submersible pump. It is located approximately 700 feet from the Camp Alice Pump Station.

### Recommendation for the Water System

The underground portion of the waterline, approximately 3,000 linear feet from Zero Curve Reservoir to the restaurant reservoir, should be replaced. This includes all service connections at the residences, personnel barracks and shop. The estimated cost, including Zero Curve Reservoir repair, site gauges and steel reservoirs, spring cover, valves, rock excavation and other miscellaneous construction costs, is $150,000. The water system should be adequate for many years once these needed improvements are made.

## ELECTRICAL POWER DISTRIBUTION SYSTEM

### Existing Conditions

Power is supplied to the park by French-Broad Electric Membership Corporation, located in Burnsville, North Carolina.

Power is served at three different locations within the park. All power comes from the overhead power transmission lines that follow the Camp Alice Service Road. A description of the three power areas follows.

Park Office Power - This area is served power from the transmission line that feeds the radio station. The power goes underground about 200 feet behind the office from an overhead power pole. A transformer is located behind the office building, and it feeds the office area.

The Restaurant Power - This area is fed power from a spur line off the Camp Alice transmission line. The power goes underground at an overhead pole located about 75 feet from the restaurant personnel building. It then feeds underground to the barracks and restaurant buildings. There are approximately 300 linear feet of underground power line at this location.

The Maintenance Area Power - This area serves power to all the upper park facilities, including the summit area. The power comes off of a spur line at the Camp Alice power line and comes up the mountain to a power pole located between the maintenance shop and personnel barracks. It then goes underground into the generator and main power room and proceeds to feed the maintenance area, ranger residences, and personnel barracks. It then travels up the mountain, along the main park road to the top of the mountain, to feed the highway patrol equipment room and tower, and then to the museum and concession area. A secondary line feeds off of this primary line to Zero Curve pump station and camping area toilet building.

There is approximately one mile of underground power cable from the maintenance area to the summit, installed in 1965.

There are frequent power failures at Mount Mitchell due to severe weather, so there are two backup diesel generators within the park. The Highway Patrol maintains the generator at the summit, and the Division of Parks and Recreation maintains the one at the maintenance area. The generator at the maintenance area was replaced in 1980.

The park is not experiencing any problem with either the underground or backup systems at this time. Due to the age of the present underground system, however, it is likely nearing the end of its life expectancy. Replacement is needed before failure occurs.

## Recommendations

The underground powerline should be replaced from the maintenance area to the summit area. A rough estimate of the cost to replace this line is $85,000. Before an OC-25 is done on this project, an inspection of the electrical distribution system should be conducted by the power company or an electrical engineer in order to get a more accurate cost estimate. Underground power should be installed from the pole at the restaurant barracks to the adjacent pole to imporve park aesthetics. The French Broad Power Company has done a good job in maintaining service to the park, considering the terrain and weather conditions at the park. The power company should continue to maintain this system.

## TELEPHONE SYSTEM

### Existing Conditions

The telephone system is owned by General Telephone Company located in Burnsville, North Carolina. One telephone line with six extensions serves the park office. One extension is in the park office, three are at the three residences, one is in the shop, and one is in the personnel barracks. The park superintendent has a private line in addition to the park extension. The restaurant has a private line with an extension at the restaurant personnel barracks.

There are two pay telephones in the park. One is for public use and is located on the front porch of the restaurant; the other is semi-private and is located at the personnel barracks.

### Recommendations

The public telephone located at the restaurant would better serve the public at the top of the mountain, but telephone service is very expensive to install. In the meantime, signs directing the public to the pay telephone have been installed.

## SUMMARY

The park utilities are in fair shape, but the sewer, water, and electrical systems will require major capital expenditures in the near future. The sewer systems are very fragile and will require the most attention.

## MAJOR CAPITAL IMPROVEMENT PROJECT PRIORITIES

Most state parks have park master plans that describe the long-range vision of what the park should ultimately be. A significant portion of master plans is devoted to identifying short- and long-term development plans for the park. Mount Mitchell State Park does not have a master plan. A park feasibility study, however, was completed in 1977 and has served as a substitute master plan.

The 1977 "Feasibility Study for Mount Mitchell State Park" noted that it was obvious, after inspecting the existing park facilities and land area, that recreational development cannot be significantly expanded in the park. The study recommended that the primary park emphasis, from a capital improvements perspective, should be to maintain and refurbish existing facilities.

In the mid 1980s, the division -- with primary input from the park superintendent and district superintendent -- developed a list of capital improvement projects needed at Mount Mitchell. By

evaluating and ranking each development project, a priority list of capital improvement projects for Mount Mitchell was established. The project ranking is based upon objectives such as promoting public health, protecting natural resources, enhancing environmental education, increasing public accessibility, and improving the park's appearance.

As a part of the general management plan process, the project development list for Mount mitchell was carefully reviewed to determine if changes were needed. The general management plan evaluation team considered factors such as changes in environmental regulations, condition of facilities, natural heritage inventory, park purpose, changes in recreation demand, visitor safety considerations, relevant legislation, land use adjacent to the park, and current recreation demand.

This review resulted in changes being made to the original project priority list, shown below.

ORIGINAL PROJECT PRIORITY LIST

| Rank | Description | Mean Score | Total Costs |
|---|---|---|---|
| 1. | Parking lot at office | 635 | $ 101,600 |
| 2. | Handicap access to picnic shelter | 596 | 23,600 |
| 3. | Improve trail to observation tower | 592 | 83,900 |
| 4. | Replace guard rails | 588 | 93,300 |
| 5. | Trail improvements | 496 | 192,700 |
| 6. | Office/visitor center | 488 | 616,600 |
| 7. | Ranger residences (3) | 454 | 579,500 |
| 8. | Renovate personnel barracks | 263 | 200,600 |
| | | TOTAL: | $1,891,800 |

RECOMMENDED CHANGES TO PROJECT PRIORITY LIST

Projects to be Deleted

1. The project for trail improvements to the observation tower ($83,900) has been combined into a new comprehensive trails project.

2. The project to replace guard rails ($93,300) has been done by the Department of Transportation under the road repair agreement.

3. The Office/Visitor Center project ($616,600) has been deleted at this time due to the uncertainty over use of the restaurant building and the increased size of the existing office and summit area facilities.

4. The personnel barracks renovation project ($200,600) has been combined into a project containing two other buildings with similar scopes.

Projects with Changed Scopes

1. Enlarge office and parking lot ($331,100): this project adds office expansion, handicap access, and visitor orientation functions to the existing parking lot expansion project.

2. Trail improvements ($330,800): this project combines all the trail projects in the park into one project, including the improvements to the path to the observation tower.

3. Two ranger residences ($305,700): this project reduces replacement of three residences to two, keeping one for the campground host program.

4. Improvements for handicap access ($277,100): this project included adding a museum to the concession building, exhibits for the museum, and renovating the old museum to a shelter. It also provides handicapped access to the park office, picnic shelter, and restaurant.

For further explanation of these projects, see Appendix B.

Projects Proposed to be Added to List

1. Improvements to utility systems ($366,000): this project combines all known sewer, water, and electrical system repairs into one project.

2. Miscellaneous building repairs ($203,500): this project combines work on the personnel barracks and restaurant building into one project. The museum, residences, and park office are covered in other projects.

For further explanation of these projects, see Appendix B.

## REVISED PROJECT PRIORITY LIST

| Rank | Description | *Mean Score | Total Costs |
|---|---|---|---|
| 1. | Improvements to utility systems | 727 | $ 366,000 |
| 2. | Office/parking lot expansion | 614 | 331,100 |
| 3. | Improvements for handicap access | 587 | 277,100 |
| 4. | Trail improvements | 499 | 330,800 |
| 5. | Miscellaneous building repairs | 499 | 203,500 |
| 6. | Ranger residences (2) | 454 | 305,700 |
| | | TOTAL: | $1,814,200 |

* The mean score comes from the Division's Project Evaluation Program (PEP). The PEP uses an evaluation formula to rank projects that considers four factors: the objective of the project; the justification or urgency for funding; the estimated annual number of persons (visitors and/or employees) who are affected by the project; and the project's significance, ranging from local to national. Projects are evaluated by the park superintendent, district superintendent, and Division management. There are 15 objectives categorizing a project's purpose, and each project can have a primary and secondary objective.

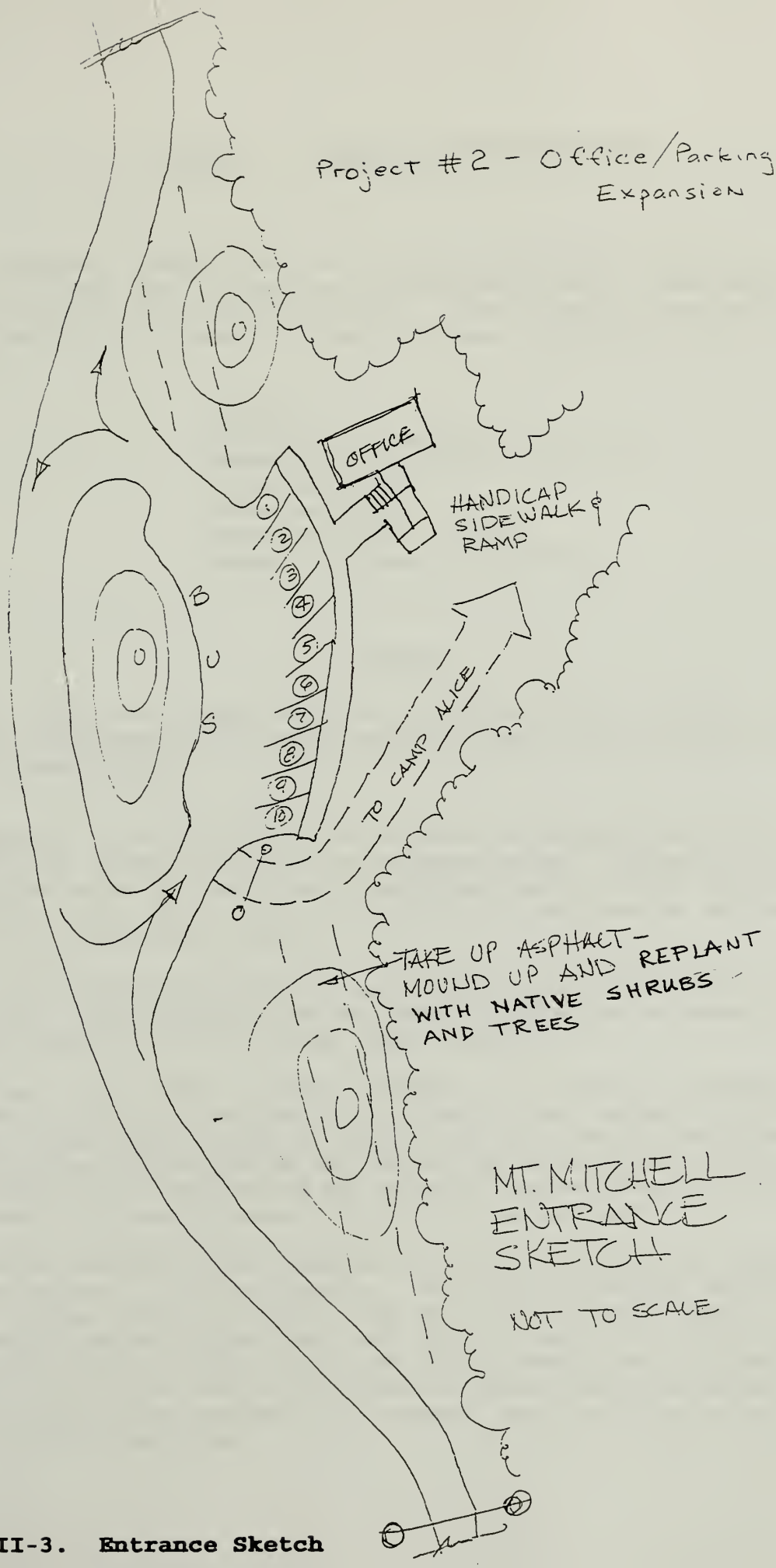

Project #2 - Office/Parking Lot Expansion
OFFICE
HANDICAP SIDEWALK & RAMP
BUS
TO CAMP ALICE
TAKE UP ASPHALT - MOUND UP AND REPLANT WITH NATIVE SHRUBS AND TREES
MT. MITCHELL ENTRANCE SKETCH
NOT TO SCALE

**Figure VII-3. Entrance Sketch**

# VIII. PARK OPERATIONS

This chapter identifies the park operations issues at Mount Mitchell State Park and makes recommendations for addressing these issues during the next five years. The issues identified at the park general management plan meetings concerned the following topics:

Trails
Hunting in the Park
Restaurant Building Operation
Staffing Needs
Tree Decline
Mount Mitchell Museum
Summit Concession Operation

## TRAILS

Issue: Due to steep terrain, fragile soils, heavy use, poor design, and insufficient maintenance, the trails at Mount Mitchell are in poor shape.

Background: The trail system at Mount Mitchell State Park is one of the most unique in the state parks system. The park is situated along the crest of the Black Mountains, and its high elevation and resulting cold, wet climate provide habitat for an extraordinary variety of flora and fauna.

Many and varied individuals and groups use the trails at Mount Mitchell. These range from serious backpackers to casual visitors making a detour off the Blue Ridge Parkway.

Likewise, the trail system itself is varied, ranging from a strenuous 2.8-mile portion of a 12-mile trail along the knife-edge ridge of the Black Mountain's crest to the stepped and graded wide gravel path to the museum and on to the summit observation tower. The trails are also varied as to what can be observed along them, from dark and dank spruce forest to open meadows.

The trail system at Mount Mitchell State Park contains approximately 8.8 miles of hiking trails. No other type use is permitted. These hiking trails provide the visitor with the means to access all major peaks within the park and various U.S. Forest Service facilities outside the park. With the exception of the Deep Gap Trail, all trails can be utilized as loop routes, although some of these routes must employ U.S. Forest Service trails outside the park for this purpose.

With the exception of Summit and Balsam trails, the trails in the park date from the time the park was established over 75 years ago. They reflect this in their lack of design for resource protection. The age of the trail system and the years of little to no maintenance because of insufficient personnel and funds have contributed to the resource damage, as have high-use levels, shallow rocky soils, extreme weather conditions, including snow falling in all months of the year, and persistent rain and fog conditions. Typical conditions at Mount Mitchell State Park include three-foot-deep gullies with exposed roots where the soil has been worn down to solid rock; and routes that pass over exposed, steep and potentially dangerous rock slopes from which all or most of the soil has been eroded. Downed trees and broken limbs from past ice and snow storms and other causes are also in evidence along the many trails.

Recommendations: Total trail mileage is estimated at 8.8 miles. Park staff say the Commissary Shelter Trail, an abandoned railroad bed, does not need upgrading. Therefore, approximately 7.2 miles of trail need repair and/or reconstruction.

Special considerations should be made in the reconstruction of the trail system at Mount Mitchell State Park. Suitable material for back-filling high grade trails with gravel and medium and low grade trails with natural soils simply do not exist within the park. The general inaccessibility of the trail network, as well as the distance from suitable suppliers of material, will require extraordinary material movement measures, thereby considerably increasing costs. All fill, step and water-bar material will have to be moved foot by foot along the trails from trail head locations as they are reconstructed. If these materials are to be moved in a manner that is both efficient and non-damaging to the natural resources, trails must be built to withstand some manner of mechanical transport. Therefore, the widths and techniques specified coincide with available rubber-tracked, walk-behind, motorized material carriers. These carriers are essentially mechanized wheelbarrows with 32-inch or less wheel bases.

After reconstruction is complete, motorized equipment identical to that used in the reconstruction effort should be purchased by the park, thus allowing an expanded park staff to maintain the reconstructed trails. Two seasonal general utility workers are needed for trail maintenance. Trail repair needs are identified as a capital improvement project in Chapter VII and Appendix B of this general management plan.

Reconstruction plans for trails that lead to U.S. Forest Service facilities should be coordinated with possible USFS plans to reconstruct USFS trails and facilities. The Tocane Ranger District of the Pisgah National Forest has hired trail crew personnel. Such coordination might, with advanced planning, be accomplished for the next federal fiscal year, which begins October 1993.

The trail map included in the park's general information brochure adequately represents the location, configuration and length of the trails at Mount Mitchell. Trail signs do not meet proposed standards, however, and should be improved.

Due to the erosion-sensitive nature of the high elevation areas within Mount Mitchell State Park, many incidences of impacts upon threatened and endangered species occur. These occurrences are associated with the ridge crest along the Deep Gap Trail, which has seen extensive resource damage. Park staff has suggested that measures be taken to alleviate this problem. Trails in critical habitat areas need to be identified and delineated. Hiking should not be allowed in any areas so identified and should be limited to areas outside of critical habitat and appropriate buffer zone.

## HUNTING IN THE PARK

Issue: Hunting in the Camp Alice area creates numerous problems.

Background: In 1969 an exchange of property between the U.S. Forest Service and the state of North Carolina took place to provide land for the park water supply. Annual hunting rights from November 2 through December 31 were reserved for this property by the Wildlife Resources Commission. This area is known as Camp Alice, or Commissary Ridge. Stepps Gap Road, through park property, was designated for management and hunter access. Due to changes in the hunting season, the park is currently maintaining 6 a.m. to 6 p.m. gate hours for hunters from early September through mid-December.

This arrangement adversely affects park operations by requiring the opening of the park entrance gate outside of normal park hours and creates an additional personnel cost. Allowing hunting on state park land is inconsistent with normal Division policy and has resulted in difficulties for staff enforcing park regulations concerning hunting.

Further, with hunters in the park, there is concern for visitor safety/liability. Hunter access and actual hunting on property marked with state park boundary signs have resulted in conflicts between park visitors and hunters.

The Stepps Gap road is maintained for no other purpose than to allow hunters access to the designated hunting area. The Division must bear the cost of maintaining this access. There is access to hunting on U.S. Forest Service property adjacent to Mount Mitchell State Park via the Buncombe Horse Range Trail. The trail is open to horses, hiking and mountain bikes, but not motorized traffic.

Park staff has noted a decline in the number of hunters using the access road in recent years. Also, recent action by the U.S.

Forest Service to eliminate the shelters may further diminish hunting pressure at the Stepps Gap Access Road.

In a letter to the Division dated September 22, 1992, the U.S. Forest Service supports the recommendation to close the access road from Mount Mitchell to the Camp Alice/Commissary Ridge area.

Recommendations: It is recommended that the Division seek an opinion from the Attorney General's Office on the legality of hunting in Mount Mitchell State Park and the issue of visitor safety-liability. It is further recommended that the gate hours for hunters be discontinued, the Stepps Gap access road be closed, and the park be closed to hunting.

## RESTAURANT BUILDING OPERATION

Issue: The cost of maintaining the Mount Mitchell restaurant/lodge facility has been considerably more than the income received from the operation. Should the restaurant operation continue? Are there other uses for the facility in conjunction with or apart from the restaurant operation?

Background: Constructed in the early 1950s, the restaurant building totals 8,361 square feet. Approximately 3,000 square feet are taken up by a dining room and kitchen, with the balance consisting of restrooms and a large room often referred to as the observation lounge. The nearby living quarters house 10 to 12 seasonal employees of the concessioner.

A Concession License Agreement is established each season with a private contractor to provide a full-service restaurant and food concession. A number of provisions are contained in the agreement to help ensure that the restaurant operation will be a quality, reasonably priced public service. Traditionally, the concessionaire has paid the Division of Parks and Recreation 6 to 7 percent of the gross income as the license fee. The following average annual figures represent the operation during a recent five-year period:

| | |
|---|---|
| Annual Park Visitation | 278,667 |
| Average Number of People Served | 23,550 |
| Percent Park Visitors Served | 8.4% |
| Average Annual Sales | $139,700 |
| Average Sale Per Person Served | $6 |
| Average Revenue Paid to DPR | $8,164 |
| Utility Costs for DPR | $1,721 |
| Custodial, Grounds Maintenance, etc. (seasonal PA 20 hr/wk, 24 wks; does not include permanent staff) | $2,400 |
| Other Operational Costs/Minor Maint. | $1,500 |

The restaurant operates only six months a year, May 2 through October 31. During the other six months, there is no heat in the building.

The building incurs high maintenance costs. During the past 15 years, $379,260 (annual average of $25,284) of capital monies have been expended on this operation. During the same period, material costs for improvements by the maintenance staff exceed $98,000.

Using these figures, it is estimated that since the mid-1970s the cost to the Division to provide a restaurant facility on Mount Mitchell has been at least $1.24 per person served in the restaurant. The superintendent and ranger staff time associated with the restaurant are not included in this computation.

The lack of an established, long-term concessionaire remains a concern. One of the big problems with the restaurant operation since its existence is the short-term contract. The longest contract period has been one year with a two-year option to renew. Rarely have more than three bidders shown an interest when the concession opportunity is advertised.

The lounge area receives minimal use. During the 1960s, a local handicraft guild operated a separate concession in this space. Subsequent efforts to develop similar uses have been unsuccessful. During the past two years, the facility has been used to make large nature photo displays available to the public. The lounge area is the only indoor meeting space available in the park.

With the nearest restaurant located approximately 20 miles away, the Mount Mitchell Restaurant would receive heavier use if more people were aware of its existence. There has been no advertising of the restaurant. The option to do so has been given to the concessionaire; but with only a one-year contract, one might be reluctant to invest in advertising. The park advisory committee recommends a long-term lease.

The building might offer potential as an environmental education center. Facilities such as Crossnore and Tremont have high year-round use. One of the questions that needs to be addressed is whether current housing is sufficient to support an environmental education center. Restaurant personnel barracks will house about 12 people; the park personnel barracks will house 12 to 14 people.

Other uses of the facilities have been discussed. They include book sales in the lounge area by Eastern National Parks and Monument Association or a nonprofit park support group; use by winter sport enthusiasts; community center-type activities; and facility rental for private functions. Mount Mitchell State Park should advertise and coordinate its seasonal program offerings and facilities with tourism councils, local chambers of commerce, and weekly, monthly, and seasonal publications.

Staff is concerned about this facility being put to an appropriate use. Whatever is decided, the impact on the park and the staff must be taken into consideration.

The facility is in good repair, and no major capital projects are planned.

Recommendations: It is recommended that a feasibility study be undertaken of the potential use of the facility as an environmental education center as well as a restaurant/lounge facility and of the potential for other uses such as those named above. Evalutaion of this facility should occur in order to determine acceptable and compatible Mount Mitchell State Park uses.

It is further recommended that we explore offering an extended contract to a restaurant concessionaire. The Mount Mitchell State Park Citizens' Advisory Committee supports adopting a long-term lease period to encourage continuity and commitment of vendors.

## STAFFING NEEDS

Issue: Inadequate staffing hampers proper management of the park and its facilities, not only making it difficult for staff to provide programs and assistance to visitors, but jeopardizing visitor safety as well.

Background: Mount Mitchell State Park has unique management and protection problems due to the type of park use, isolation, size, age of facilities, heavy park use, and extreme seasonal weather conditions. As a result, the two certified law enforcement officers cannot adequately operate, protect and manage the park to a desired minimum level.

There are 8,760 hours in a year. This park is open to the public nearly half of those hours (Table VIII-1).

**Table VIII-1. Mount Mitchell Hours of Operation**

| Month | Open | Close | Days x Hours | = Total |
|---|---|---|---|---|
| June, July, Aug | 8 am | 9 pm | 92 days x 13 hrs | = 1196 hrs |
| Apr, May, Sept | 8 am | 8 pm | 91 days x 12 hrs | = 1092 hrs |
| Mar, Oct | 8 am | 7 pm | 62 days x 11 hrs | = 682 hrs |
| Nov, Dec, Jan | 8 am | 6 pm | 120 days x 10 hrs | = 1200 hrs |
| | | | | 4170 hrs |
| Park is closed Christmas Day. | | | | - 10 hrs |
| | | | | 4160 hrs |

The park is open a total of 4160 hours per year. This figure does not take into account call back time for two staff persons to handle problems with campers, overnight backpackers and emergencies.

There are 2,080 work hours a year for each permanent employee. The park is open a total of 3,069 hours from April 1 to December 15. To keep two rangers on duty during this time requires 6,128 on-duty hours. Keeping one ranger on duty the remainder of the year, December 16 to March 31, requires 1,081 hours. A yearly total of 7,219 hours, minimum, is needed at the park.

In addition to 206 hours of vacation leave and 88 hours of state holidays, the park superintendent spends approximately 567 hours each year out of the park on park-related business, such as making bank deposits, attending district staff meetings, law enforcement refresher training, outreach programs and court, and picking up mail. This leaves approximately 1,307 hours for work in the park.

If two additional rangers are hired, and if each takes the maximum vacation earned each year (94 hours), the state holidays (88 hours), law enforcement refresher training (40 hours), and miscellaneous hours off (sick leave, I&E training 25 hours), this adds up to 247 hours away from the park, leaving a total of 3666 hours for work in the park.

2873 work hours now available to work in the park (park supt and chief ranger)
3666 work hours for two additional rangers (2080 hrs./person, minus 247 hrs.)

6539 total available hours to operate Mount Mitchell for one year with four law enforcement personnel.

7219 total yearly hours needed for minimum staffing
6539 total available hours with four law enforcement personnel

680 Total additional hours needed to meet the minimum staffing requirement.

In addition, there are 11 certified seasonal positions that require interviews and written recommendations for hiring each year. There are also five peak load positions, three volunteers plus one support group. The total volunteer hours worked at Mount Mitchell during 1991 was 726. An estimated four hours each week are spent by permanent staff to support volunteer efforts at the park.

The park has over 300,000 visitors each year and an operating budget of $270,755 (FY '91-92). Receipts total between $114,000

and $135,000 each year. Two major concessions are located in the park (refreshment/novelty stand and a restaurant). There are 25 to 40 research activity permits being processed and six research projects ongoing. Park staff averages seven hours a week dealing with natural resource management issues.

In 1988-89 a total of 39 I&E programs were given. Park staff spent only one and one-half hours of preparation time per program or a total of 58 hours a year in preparation time. In 1990-91 a total of 76 I&E programs were given. Due to the different standards necessary to comply with Division guidelines and the complexity of new programs, 8 hours of preparation time per program occurred or a total of 608 hours a year in preparation time. During 1988-89 I&E programs were given to 1840 visitors. In 1990-91, 2100 visitors attended I&E programs. There were two outreach programs given during 1988-89 and four during 1990-91.

Recommendations: Three ranger positions should be added immediately to adequately staff the park. A seasonal clerk-typist is needed to work in the park office during week days after 5 p.m. and to provide weekend coverage. In addition, two six-month general utility workers are needed for trails maintenance.

**Table VIII-2. Mount Mitchell Staffing**

| Current Staff | | Proposed Additions | |
|---|---|---|---|
| | PERMANENT | | |
| Park Superintendent III | 1 | Park Ranger I | 3 |
| Park Ranger III | 1 | | |
| Maintenance Mechanic III | 1 | | |
| Maintenance Mechanic I | 1 | | |
| Office Assistant III | 1 | | |
| | SEASONAL | | |
| | | Peak Load Clerk Typist | 1 |
| | | 6-Month General Utility Worker | 2 |

## INTERPRETIVE BROCHURES AND PUBLICATIONS

Issue: The very obvious decline of the forest at Mount Mitchell prompts many questions. Clear and concise information is needed to help the public understand what is happening. A brochure on tree decline is a priority. Other brochures are needed as well.

Background: The most asked question by park visitors is "What happened to the trees?" There is no short answer to the question, and much time is spent by staff in trying to give accurate information about the trees to the public. During the busy season, each staff person (seasonal and permanent) spends approximately one hour per week answering visitors' questions on this issue.

The park receives a minimum of one request per week for written material on the trees. Approximately 90 percent of these requests are from individual students or school groups. Currently, park staff must send information supplied by the Blue Ridge Parkway. The Division's general information brochure on Mount Mitchell addresses this issue, but not in the detail being sought.

A brochure on this topic is currently being developed. It will serve to clarify pertinent facts and correct much misinformation regarding the tree decline. Ultimately, interpretive brochures addressing the unique biologic, climatic, ecologic, and geologic features of Mount Mitchell State Park should be developed.

Recommendations: Develop a three-fold, one-page brochure that could be easily inserted in an envelope and mailed.

Within the next six months, take the text that is currently on the "What's Happening to the Trees?" exhibit and reformat it as a brochure. Have the Acid Rain Foundation review it, focusing particularly on the Balsam Wooly Aphid, and add supportive detail and graphics as appropriate. After editing and formatting, send the brochure mock-up to the park for printing and distribution.

After two years of use, revise the text to incorporate up-to-date knowledge and more graphics.

## MOUNT MITCHELL MUSEUM

Issue: The Mount Mitchell museum is inadequate.

Background: The museum was first completed in 1982. Since then, over 100,000 visitors per year have visited the facility. Almost no money has been spent to maintain exhibits, replace worn parts, or develop new exhibits. The air conditioning/heating unit has been out for more than one winter, resulting in a rapid decay of exhibits.

Currently, every exhibit in the museum could use some updating or refurbishing. Some exhibits need to be replaced entirely. The track lighting needs to be improved so the exhibits can be viewed more effectively.

Recommendations: A permanent budget line needs to be set for the museum so regular maintenance needs can be met.

Exhibits needing only minor revisions or replacement of text should be re-silkscreened within the year. Exhibits needing modifications to contents should be redone within the next two years. For exhibits that need to be totally revised, a plan for each of them should be in place within one year and new exhibits developed by the end of this GMP cycle. For building modifications, mainly improved lighting, a plan should be in place prior to the new exhibit plans so modifications will facilitate the use and maintenance of the new exhibits.

| | |
|---|---|
| Approximate cost for re-silkscreening work: | $ 2,300 |
| Approximate cost for exhibit modifications: | 11,000 |
| Approximate cost for complete development of 4-5 new exhibits | 15,000 |
| Approximate cost for building modifications | 500 |
| | $28,800 |

## MOUNT MITCHELL SUMMIT CONCESSION

Issue: Is the current in-house operation of the summit concession the best alternative? Frequent bank deposits of revenue from the concession require significant staff time. Can improvements be made in this inefficient use of time?

Background: This operation generated gross revenue of approximately $114,270 from April 1993 through October 1994. It is the highest grossing concession operated by the Division. Net profit for the same period was $12,513.

A manager is hired each year and supervised by the Mount Mitchell park ranger. The operation is open eight hours per day from Memorial Day through Labor Day, as well as weekends in the spring and fall. One of the major operational problems of the concession is the impact it has on the ranger's time. Given the high sales volume, the number of seasonal employees supervised (six), the weekly inventories, order processing, and the processing of deposits, the ranger does not have adequate time to perform other duties. The best way to solve this problem is to add at least one additional ranger to the Mount Mitchell staff.

There have been discussions of contracting the concession to private for-profit or non-profit entities, particularly non-profit

organizations that support the Division; however, since such groups (Eastern National Parks and Monument Association, Friends groups, etc.) tend to depend on a substantial amount of help from the agencies they support, the implementation of this option may not significantly free up the ranger's time. The ranger would still have to manage the operation, as is the case at the Fort Macon bookstore. Another disadvantage is that the Division would likely see a decrease in net revenue. There are obvious problems, but under the right terms and provisions, the contracting of the concession might work for all. The question is, can all parties come to an agreement on those terms?

Another problem the operation faces is the long distance that must be travelled to the bank to make deposits. There is no easy fix for this situation. The park is in a remote location, with only one road out to the Blue Ridge Parkway. The summit operation generates more than the $250 deposit limit almost every day during busy periods. The trek to the bank takes about two and a half hours each day, and there is only one ranger and one superintendent assigned to the park. Under these conditions, making the deposit is not only time consuming, but a security risk as well. Having a courier pick up the deposit is probably not cost-efficient. Moreover, if people start to see Wells Fargo or Brinks traveling in and out of the park on a regular basis, it could possibly increase the security risk of having the money in the park.

One way to handle the situation is to add at least one additional ranger to the park staff. This would allow for coverage of the park by a commissioned law-enforcement officer at all times. Currently, when the superintendent or the ranger is off or has an emergency, the park is covered by seasonal employees and the maintenance mechanic only. This is not desirable. Making deposits less often is not an option under current state requirements. The possibility of obtaining a special exemption that would allow less frequent bank deposits by Mount Mitchell staff should be considered.

Only law enforcement staff are allowed to make deposits. All measures are taken to keep the timing of deposits irregular. Measures such as carrying the deposits in bags that do not look like money bags and traveling different routes (to the extent possible) to and from the bank are also employed. Park radios are carried on all deposits to allow the quick communication with other law enforcement and emergency response units. At the park, cash accumulations are stored in a fireproof safe that is bolted to the floor. To date, there has been only one break-in that resulted in the loss of the safe and its contents, and that was in the 1970s.

<u>Recommendations</u>: The concessions manager should investigate the desirability and feasibility of contracting the summit concession operations. In addition, another ranger position is needed to assist with deposits. The possibility of an exemption allowing less frequent deposits should be investigated.

# IX. LAND ACQUISITION NEEDS

## LAND ACQUISITION STATUS

Mount Mitchell State Park contains 1,677 acres. Mount Mitchell State Park was included in the 1985 appropriation for state park land acquisition, but no land was acquired because of reduction in funding made by the General Assembly. The acquisition of land necessary to control access to the park and resource protection was listed in the legislation.

A scenic easement on approximately 8,000 acres of the Cane River valley was granted to the American Farmland Trust. The park and park visitors are the main beneficiaries of this scenic easement, which serves to protect a large portion of the vista west of the park.

## FUTURE LAND ACQUISITION NEEDS

To complete the master plan for Mount Mitchell State Park would require the fee simple or easement acquisition of 1,137 acres. Land acquisition objectives are to eliminate hunting access and to protect and buffer the natural and scenic features of the park.

## SUMMARY TABLE

| | |
|---|---|
| 1985 size of the park | 1,677 acres |
| 1985 land program additions | 0 acres |
| Current size of the park | 1,677 acres |
| Master planned needs | 1,137 acres |
| Master planned size of the park | 2,814 acres |

# MOUNT MITCHELL
## STATE PARK
## LAND ACQUISITION

LEGEND

PARK–1985

FUTURE NEEDS

GRAPHIC SCALE

0 1000' 2000'

# APPENDIX A

# PARK PROFILE

# MOUNT MITCHELL

## PARK PROFILE

**Location:** Yancey County

**Size:** 1,677 acres

**Reason for Establishment:**

Mount Mitchell is the highest mountain east of the Mississippi River (6,684 feet). Its unique geological, biological, and scenic values were recognized, and it was established as a park in 1916 to prevent it from being clear-cut.

**Facilities:**

Tent Camping (9 sites)
Office
Picnic Area (2 shelters, 40 tables with grills)
Restaurant
Concession
Museum
Observation Tower
Trails

**Existing Staff:**

| Permanent: | Seasonal: |
|---|---|
| Park Superintendent III | Park Attendant (3) |
| Park Ranger III | Refreshment Stand Manager |
| Maintenance Mechanic (2) | Refreshment Stand Clerk (5) |
| | Clerk Typist |
| | General Utility Worker |

**Statistics:**

| | FY 1991-92 |
|---|---|
| Visitation (calendar 1992) | 263,012 |
| Operating Budget | $270,755 |
| Revenue | $104,191 |

# APPENDIX B

# CAPITAL IMPROVEMENT REQUESTS

North Carolina's Division of Parks and Recreation

JUL 16, 92 

Projects By Park In Priority Order

| Job Description | Job Codes | Dst Cde | Locations | Mean Score | Total Costs |
|---|---|---|---|---|---|
| Improvements to utility systems | 600R 1 1 | WES | Mt Mitchell | 727 | $ 366,000 |
| Office/parking lot expansion | 410R 1 7 | WES | Mt Mitchell | 614 | $ 331,100 |
| Improvements for handicap access | 124R 1 5 | WES | Mt Mitchell | 587 | $ 277,100 |
| Trail improvements | 260R 1 2 | WES | Mt Mitchell | 499 | $ 330,800 |
| Miscellaneous building repairs | 530R 1 1 | WES | Mt Mitchell | 499 | $ 203,500 |
| Ranger residences (2) | 300N 1 6 | WES | Mt Mitchell | 454 | $ 305,700 |
| | | | | | $ 1,814,200 |
| | | | | | $ 1,814,200 |

Total number of jobs reported = 6

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